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The Nebraska State Medical Journal

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Volume XII
January 1927--December 1927

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Kantor, D. B., Sargent.
Koefoot, T. H., Broken Bow.
Mathews, A. L., Callaway.
Morrow, J. H., Merna.
Mullins, C. L., Broken Bow.
Pennington, G. E., Broken Bow.
Rydberg, C. A., Litchfield.
Spivey, C. D., Anselmo.
Stadden, J. C., Ansley.
Talbot, R. C., Broken Bow.
Wanek, A. E., Loup City.
Talbot, W. E., Broken Bow.

DAWSON

Anderson, Arthur, Lexington.
Anderson, Joel, North Platte.
Birkofer, W. J., Gothenburg.
Bozarth, J. W., Los Angeles, Calif.
Easton, R. H., Eustis.
Edwards, C. B., Overton.
Fochtman, L. H., Cozad.
Johnson, W. T., Gothenburg.
Kile, J. B., Eddyville.
Moore, M. S., Gothenburg.
Olessen, J. E., Lexington.
Reed, O. C., Torrington, Wyo.
Sheets, C. H., Cozad.
Stevenson, E. C., Gothenburg.
Wycoff, R. S., Lexington.

DODGE

Allen, J. G., Fremont.
Bloch, D. M., Arlington.
Buchanan, A. E., Fremont.
Byers, G. A., Rimbey Alberta, Can.
Byers, R. C., Fremont.
Callahan, A. J., Snyder.
Davies, R. A., Arlington.
Davies, W. J., Fremont.
Devries, J. S., Fremont.
Fasser, A. O., Fremont.
Golding, D. G., Santa Monica, Calif.
Harvey, Andrew, Fremont.
Haslam, G. A., Fremont.
Hauser, B. B., Hooper.
Heine, C. D., Hooper.
Heine, W. H., Fremont.
Hoff, A. E., North Bend.
Hustead, E. L., Scribner.
Homan, T. J., Howells.
Kenney, B. V., Dodge.
Metzinger, J. J., Fremont.
Meyers, H. D., Howells.
Moore, C. G., Fremont.
Morrow, H. N., Fremont.
Pedersen, H. C., Fremont.
Preston, S. A., Fremont.
Putman, L. J., Fremont.
Reeder, G. S., Fremont.
Seivers, C. P., Fremont.
Seward, Guy, Fremont.
Stuart, A. E., Cedar Bluffs.
Vanderhoff, D. W., Scribner.
Van Metre, R. T., Fremont.
Wallin, S. P., Snyder.
Zellors, M. T., Hooper.

FILLMORE

Ashby, A. A., Fairmont.
Bixby, J., Geneva.
Delfs, C. G., Schickley.
Harvey, E. A., Gothenburg.
Hickman, J. C., Geneva.
Pendell, G. D., Geneva.
Smrha, V. V., Milligan.
Stratton, A. B., Exeter.
Wiggins, W. S., Exeter.

FRANKLIN

Campbell, R. B., Franklin.
Devers, W. I., Upland.
Dugan, W. F., Campbell.
Graham, A. C., Nemaha.
Knowles, C. E., Franklin.
Malick, U. H., Bloomington.
Nail, F. E., Riverton.
Neville, Dennis, Hildreth.
Packwood, W. E., Riverton.
Smith, H. C., Franklin.
Sparks, M. L., Bloomington.

FURNAS

Bratt, Mary, Arapahoe.
Doher, T. L., Wilsonville.
Green, R. D., Beaver City.
Kee, A. L., Cambridge.
Miller, W. C., Arapahoe.
Minnick, Clarence, Cambridge.
Shank, F. W., Oxford.
Smith, D. L., Wilsonville.
Stewart, B. F., Cambridge.

GAGE

Baird, C. G., Beatrice.
Bradley, C. A., Beatrice.
Brown, H. R., Beatrice.
Buckley, F. W., Beatrice.
Curry, C. S., Beatrice.
Davis, D. D., Liberty.
Elias, Francis, Wymore.
Fall, C. P., Beatrice.
Gafford, C. C., Wymore.
Gillespie, P. L., Beatrice.
Haworth, D. E., Wymore.
Hepperlen, H. M., Beatrice.
Judd, J. H., Beatrice.
Lee, A., Pickerel.
Leibel, J. R., Beatrice.
McGirr, J. I., Beatrice.
Noble, R. C., Beatrice.
Penner, H. G., Beatrice.
Penner, L. E., Beatrice.
Pickett, I. N., Odell.
Platz, Ada, Beatrice.
Rice, C. E., Odell.
Roe, G. L., Beatrice.
Rush, W. A., Beatrice.
Schowengerdt, F. T., Cortland.
Sidwell, L. T., Beatrice.
Skinner, A. O., Beatrice.
Thomas, C. W., Wymore.
Tucker, J. C., Beatrice.
Waddell, J. C., Beatrice.
Waggener, J. T., Adams.
Walden, C. W., Beatrice.

Warner, E. A., Blue Springs.
Wildhaber, W. T., Beatrice.

HALL

Arrasmith, W. J., Grand Island.
Arrasmith, W. W., Grand Island.
Berchtold, V. E., Norfolk.
Carson, D. H., McAllen, Texas.
Dodd, E., Cairo.
Farnsworth, A. H., Grand Island.
Farnsworth, E. E., Grand Island.
Gelow, J. E., Grand Island.
Higgins, J. E., Grand Island.
Hombach, W. H., Grand Island.
Hubbell, A. T., Wood River.
Johnson, E. G., Grand Island.
McGrath, B. R., Grand Island.
McGrath, W. D., Grand Island.
Morton, H. B., Doniphan.
Phelan, L., Grand Island.
Piersol, M. R., Cairo.
Reily, J. V., Grand Island.
Roeder, Geo., Sacramento, Calif.
Ryder, F. D., Grand Island.
Smith, A. G., Wood River.
Triplett, J. M., Grand Island.
Watson, E. A., Grand Island.
Wengert, H. C., Grand Island.
Woodin, J. G., Grand Island.
Woodruff, R. C., Grand Island.

HAMILTON

Cooper, R. M., Aurora.
Haughey, I. W., Aurora.
Hustead, C. D., Aurora.
Kostal, A. A., Giltner.
Marvel, G. H., Aurora.
Steenberg, D. B., Aurora.
Steenberg, E. A., Aurora.
Steenberg, E. K., Aurora.
Troester, F. M., Hampton.
Weaver, R. L., Marquette.
Woodard, J. M., Aurora.

HARLAN

Bartlett, W. C., Alma.
Campbell, J. N., Stamford.
Gardner, A. J., Orleans.
Kerr, R. H., Alma.
Rogers, D. R., Ragan.
Rundle, W. G., Orleans.
Talcott, V. V., Republican City.

HOLT

Baldwin, F. J., Chadron.
Brown, J. P., Stuart.
Broz, J. S., Rushville.
Carter, L. A., O'Neill.
Cameron, H. C., Johnstown.
Compton, A. N., Valentine.
Crawford, W. H., Rushville.
Douglas, W. J., Atkinson.
Dwyer, E. H., Gordon.
Farner, B., Ainsworth.
Finley, W. B., O'Neill.
French, O. W., Page.
Gill, J. W., Chambers.
Gilligan, J. P., O'Neill.
Green, Carl, Niobrara.
Griot, G. A., Chadron.
Hartwell, J. E., Crawford.
Hoops, Marcus, Springview.
Ira, G. B., Lynch.
Johnson, Chester, Valentine.
Kriz, R. E., Lynch.
Lawson, T. J., Ainsworth.
Lear, W. D., Springview.
Lewis, Alfred, Valentine.
Limburg, J. I., Spencer.
McKee, N. P., Atkinson.
Oxford, E. J., Chambers.
Rasch, A. G., Ainsworth.
Remy, G. O., Ainsworth.
Richards, B. F., Crawford.
Root, C. H., Bassett.
Seasongood, R. R., Naper.
Sterling, M. B. C., Burton.
Sturdevant, C. L., Atkinson.
Wilson, F. L., Stuart.
Venneman, F. W., Lynch.
Zimmerman, C. F., Naper.

HOWARD

Arnold, M. A., St. Paul.
Frandsen, Chas., Scotia.
Grothan, O., St. Paul.
Hanisch, E. C., St. Paul.
Holm, A. H., Wilback.
Nicholsen, F. S., St. Paul.
Pederson, P. M., Dannebrog.

JEFFERSON

DuVall, G. R., Fairbury.
Harvey, H. E., Fairbury.
Heath, G. A., Fairbury.
Hughes, D. O., Fairbury.
Humphrey, H. H., Daykin.
Lynch, G. M., Fairbury.
O'Neill, O. S., Steel City.
Potter, H. E., Fairbury.
Powell, M. J., Fairbury.
Taylor, J. S., Fairbury.
Welsh, W. L., Fairbury.

JOHNSON

Barnes, C. D., Tecumseh.
Conlee, C. C., Cook.
Fitzsimmons, A. P., Tecumseh.
Heilman, W. L., Sterling.
Howard, Sullivan, Elk Creek.
Morrill, W. L., Sterling.
Rubleman, G. J., Tecumseh.
Turner, J. W., Sterling.
Zeilger, C. H., Vesta.

KEITH-PERKINS

Bell, F. M., Grant.
Fall, N. B., Madrid.
Heider, C. F., Sutherland.
Vandiver, H. A., Ogallala.

KNOX

Burrell, R. H., Creighton.
Clark, W. K., Valentine.
Johnson, Rudolph, Wausa.
MacNamara, R. B., Crofton.
Swift, C. H., Crofton.

LANCASTER

Adams, R. B., Lincoln.
Albin, W. L., Lincoln.
Andrews, C. F., Lincoln.
Angle, E. E., Lincoln.
Angle, E. J., Lincoln.
Arnholt, M. F., Lincoln.
Arnold, C. H., Lincoln.
Bailey, B. F., Lincoln.
Bartholomew, P. H., Lincoln.
Becker, W. C., Lincoln.
Black, Paul, Lincoln.
Bowman, D. J., Lincoln.
Breuer, C. H., Gilroy, Calif.
Breuer, M. J., Lincoln.
Brooks, E. B., Lincoln.
Bryan, A. W., Lincoln.
Carothers, J. W., Lincoln.
Carveth, W. W., Lincoln.
Chapman, Chauncey, Lincoln.
Churchill, I. W., University Place.
Clements, S. C., Lincoln.
Colburn, W. O., Lincoln.
Coleman, F. D., Ulysses.
Cook, S. E., Lincoln.
Covey, G. W., Lincoln.
Crook, Roy, University Place.
Cummings, E. D., Lincoln.
Curtis, W. L., Lincoln.
Dayton, W. L., Lincoln.
Deppen, E. N., Lincoln.
Eiche, Fred, Lincoln.
Elliott, W. M., Lincoln.
Emerson, C., Lincoln.
Everett, Ernest, Lincoln.
Everett, H. H., Lincoln.
Everett, O. W., Lincoln.
Fahnestock, C. L., Lincoln.
Finkle, B. A., Lincoln.
Flansburg, H. E., Lincoln.
Flanagan, May L., Lincoln.
Frey, C. E., Lincoln.
Furgason, A. P., Lincoln.
Graham, A. W., Lincoln.
Graham, F. A., Lincoln.
Griffiths, D. G., Lincoln.
Hancock, E. W., Lincoln.
Hanson, Daisy, Solomon, Kansas.
Harms, C. W. W., Lincoln.
Haverstock, H. T., Lincoln.
Hickman, C. C., Lincoln.
Hilton, D. G., Lincoln.
Hohlen, K. S. J., Lincoln.
Hollenbeck, F. B., Lincoln.
Hompes, J. J., Lincoln.
Hornbeck, A. R., Lincoln.
Hummel, R. O., Lincoln.
Johnson, C. C., Lincoln.
Johnson, F. B., Lincoln.
Kail, Carl, Lincoln.
Koenig, Margaret W., Little Rock, Arkansas.
Lehnhoff, H. J., Lincoln.
Lewis, Geo., Lincoln.
Loomis, J. J., Lincoln.
Lovell, A. J., College View.
Lyman, R. A., Lincoln.
McCarthy, T. F., Lincoln.
McKinnon, A. I., Lincoln.
Mayhew, J. M., Lincoln.
Metheny, S. E., Savannah, Mo.
Mitchell, A. R., Lincoln.
Moyer, T. C., Lincoln.
Mueller, H. B., Lincoln.
Munger, A. D., Lincoln.
Munger, I., C., Lincoln,
Neely, J. M., Lincoln.
Olney, R. C., Lincoln.
Orr, H. W., Lincoln.
Owen, L. J., Lincoln.
Philbrick, I. C., Lincoln.
Ramey, W. N., Lincoln.
Reed, E. B., Lincoln.
Reese, S O., Lincoln.
Reynolds, R. W., Lincoln.
Rickard, W. G., Lincoln.
Rider, E. E., Lincoln.
Rogers, F. L., Lincoln.
Royal, Paul, Lincoln.
Rowe, E. W., Lincoln.
Sanderson, D. D., Lincoln.
Smith, A. L., Lincoln.
Smith, A. H., Imperial.
Smith, R. L., Lincoln.
Snipes, J. J., Lincoln.
Speier, A. D., Lincoln.
Spradling, R. H., Lincoln.
Stapleton, H. B., Hickman.
Taylor, H. A., University Place.
Taylor, J. D., University Place.
Teal, F. F., Lincoln.
Thomas, J. W., Lincoln.
Thompson, J. C., Lincoln.
Thomson, J. E. M., Lincoln.
Waite, H. H., Lincoln.
Walker, G. H., Lincoln.
Warner, Ruth, Lincoln.
Wegner, E. S., Lincoln.
Welch, J. S., Lincoln.
Whitham, R. A., Lincoln.
Wiedman, E. V., Lincoln.
Wild, W. F., New York.
Williams, B. F., Lincoln.
Williams, J. P., Lincoln.
Wilson, W. H., Lincoln.
Woodard, J. M., Lincoln.
Wright, F. T., Ceresco.
Zemer, S. G., Lincoln.

LINCOLN

Ames, M. A., North Platte.
Clark, Harvey, North Platte.
Dent, G. B., North Platte.
Fetter, E. W., North Platte.
Kennon, C. E., Maxwell.
Kerr, T. J., North Platte.
Lusk, W. D., Wellsfleet.
McDonald, H. A., No. Platte.
McGraw, H. G., Tryon.
Morris, G. H., Oshkosh.
Newman, J. C., Wallace.
Ostling, E. H., Lewellen.
Pease, B. C., North Platte.
Platt, O. R., North Platte.
Redfield, J. B., North Platte.
Schrock, A. C., Hebron.
Selby, C. A., North Platte.
Walker, H. H., North Platte.
Wurtele, F. J., North Platte.

MADISON

Allen, S. G., Stanton.
Allerton, Perry, Tilden.
Barr, C. C., Tilden.
Barry, Augustus, Norfolk.
Bennie, J. W., Clearwater.
Benthock, Walter, Pierce.
Brush, E. L., Norfolk.
Campbell, S. A., Norfolk.
Charlton, G. E., Norfolk.
Craft, W. T., Brunswick.
Conwall, P. L., Elgin.
Curtis, E. E., Neligh.
Emrich, E. L., Norfolk.
Fletcher, D. G., Orchard.
Fletcher, T. W., Orchard.
Frary, R. A., Stanton.
Frink, F. L., Newman Grove.
Gadbois, A. E., Norfolk.
Graham, W. W., Elgin.
Hansen, G. M., Madison.
Harrison, U. S., Neligh.
Hoefer, C. A., Wisner.
Hopper, O. C., Stanton.
Howley, A. N., Norfolk.
Jensen, Frank, Newman Grove.
Johnson, L. A., Plainview.
Kindred, H. L., Meadow Grove.
Long, F. A., Madison.
Maillard, A. E., Osmond.
McAleer, E. C., Norfolk.
McCarthy, J. D., Elgin.
Melerian, H., Plainview.
Morris, H. G., Newman Grove.
Mullong, C. R., Norfolk.
Nelson, L. L., Norfolk.
Newquist, M. N., Bloomfield.
Nye, F. H., Plainview.
Pollack, F. A., Norfolk.
Reid, J. D., Pilger.
Rogers, C. E., Osmond.

Rudloff, F. X., Battle Creek.
Salter, F. G., Pierce.
Salter, P. H., Norfolk.
Sayre, C. E., Pierce.
Schlumberger, P. R., Oakdale.
Schwedehelm, A. J., Creighton.
Sonneland, A. M., Norfolk.
Stark, Lucien, Norfolk.
Tanner, Edward, Battle Creek.
Verges, C. J., Norfolk.
Waters, T. H., Norfolk.
Wilson, E. O., Madison.
Young, G. A., Norfolk.

MERRICK

Benton, J. E., Central City.
Boyd, E. E., Central City.
Brown, A. D., Central City.
Douglas, R. R., Clarks.
Fouts, Fred, Central City.
Glatfelter, H. E., Central City.
Hutchison, J. W., Central City.
Line, T. H., Central City.
Paxton, C. C., Palmer.
Racines, J. Y., Palmer.

NANCE

Balcom, R. D., Genoa.
Davis, Homer, Genoa.
Johnson, F. W., Fullerton.
King, H. E., Belgrade.
Kirkpatrick, M. E., Fullerton.
Williams, C. D., Genoa.

NEMAHA

Cline, Edgar, Auburn.
Irvin, I. W., Auburn.
Lorance, B. F., Auburn.
Lutgen, C. A., Auburn.
Reed, E. C., Peru.
Ramsey, A. J., Auburn.
Smith, B. A., Auburn.
Stappenbeck, Paul, Brock.
Tyler, E. M., Auburn.
Vance, V. V., Peru.
Van Osdel, S. A., Auburn.
Wilson, J. S., Johnson.

NUCKOLLS

Brainard, J. E., Superior.
Diercker, J. B., Lawrence.
McMahon, C. G., Superior.
Mitchell, W. F., Superior.
Nelson, W. H., Ruskin.
Nelson, W. W., Hardy.
Pederson, A. M., Ruskin.
Trowbridge, J. R., Superior.

OMAHA-DOUGLAS

Adams, A. B., Omaha.
Adams, W. J., Omaha.
Adcock, L. C., Omaha.
Ahlquist, J. A., Tura, Assam.
Allen, J. F., Omaha.
Allingham, H. T., Omaha.
Anderson, H. E., Omaha.
Anderson, W. N., Omaha.
Attwood, N. H., Omaha.
Ballard, C. H., Omaha.
Barnhardt, E. G., Omaha.
Banister, J. M., Omaha.
Bantin, C. F., Omaha.
Bantin, E. W., Omaha.
Baptist, Jno., Omaha.
Barry, M. William, Omaha.
Bartek, J. G., Omaha.
Beck, F. O., Omaha.
Bennett, A. E., Omaha.
Best, R. R., Omaha.
Betz, W. H., Omaha.
Blackman, J. R., Omaha.
Bleick, L. D., Omaha.
Bliss, R. W., Omaha.
Borghoff, J. A., Omaha.
Brandt, E. H., Omaha.
Bridges, E. L., Omaha.
Bridges, W. O., Omaha.
Brown, A. J., Omaha.
Brown, C. P., Omaha.
Burns, B. C., Omaha.
Bushman, L. B., Omaha.
Callfas, W. F., Omaha.
Cassidy, W. A., Omaha.
Chaloupka, J. G., Omaha.
Cristie, B. W., Omaha.
Clark, C. F., Omaha.
Clark, F. S., Omaha.
Cloyd, A. D., Omaha.
Collins, R. K., Aurora, Ill.
Condon, A. P., Omaha.
Conlin, F. M., Omaha.
Connolly, E. A., Omaha.
Cook, L. J., Omaha.
Cross, Clara, Omaha.
Crummer, LeRoy, Omaha.
Cuscaden, Gertrude, Omaha.
Davis, B. B., Omaha.
Davis, E. G., Omaha.
Davis, H. H., Omaha.
Davis, J. C., Jr., Omaha.
Davis, W. M., Omaha.
Davis, W. W., Omaha.
DeLanney, L. A., Omaha.
Dermody, L. A., Omaha.
Dishong, G. W., Omaha.
Dodge, R. A., Omaha.
Dow, A. G., Omaha.
Duffy, F. M., Omaha.
Duffy, J. J., Omaha.
Duncan, J. W., Omaha.
Dunn, A. D., Omaha.
Dunn, F. L., Omaha.
Dwyer, J. R., Omaha.
Dwyer, T. J., Omaha.
Edgington, A. A., Omaha.
Edmiston, A. W., Omaha.
Eldredge, R. B., Omaha.
Ellis, P. H., Omaha.
Emmert, Max, Omaha.
Erman, J. M., Omaha.
Evans, E. B., Omaha.
Ewing, B. H., Omaha.
Fairchild, Nora M., Omaha.
Farrell, R. F., Omaha.
Faulk, F. W., Omaha.
Fitzsimmons, A. W., Omaha.
Findley, Palmer, Omaha.
Fitzgibbons, H. M., Omaha.
Flothow, M. W., Omaha.
Foltz, C. B., Omaha.
Ford, M. J., Omaha.
Fouts, R. W., Omaha.
Freymann, J. J., Omaha.
Gardner, J. F., Omaha.
Gerald, H. F., Omaha.
Gerrie, W. A., Omaha.
Gifford, Harold, Omaha.
Gifford, S. R., Omaha.
Gilmore, Robt., Omaha.
Gleeson, J. J., Omaha.
Goodrich, G. W., Omaha.
Greenberg, Abraham, Omaha.
Grier, M. E., Omaha.
Grodinsky, Manuel, Omaha.
Hall, B. W., Omaha.
Hall, L. T., Omaha.
Hamilton, H. P., Omaha.
Hamilton, H. B., Omaha.
Haney, W. P., Omaha.
Hanisch, L. E., Omaha.
Hansen, Alex F. J., Tacoma, Wash.
Hardy, C. C., Omaha.
Harris, G. A., Valley.
Harris, T. T., Omaha.
Haslam, T. P., Richmond, Va.
Hauslein, C. M., Omaha.
Heagey, F. W., Omaha.
Hellwig, J. W., Omaha.
Henry, E. C., Omaha.
Henske, J. A., Omaha.
Heumann, J. M. F., Omaha.
Hickey, C. W., Bennington.
Hirschman, Herman, Omaha.
Hoffman, L. O., Omaha.
Hollister, R. R., Omaha.
Holovitchiner, E., Omaha.
Holst, John, Omaha.
Hotz, Harley, Omaha.
Houlton, T. L., Omaha.
Howard, M. C., Omaha.
Hull, C. A., Omaha.
Hunt, K. M., Omaha.
Hyde, J. F., Omaha.
Impey, C. C., Omaha.
Isaacs, David, Omaha.
Iwerson, J. C., Omaha.
Jahr, H. M., Omaha.
James, C. S., Omaha.
Jefferson, Alfred, Omaha.
Jenkins, H. J., Omaha.
Johnson, A. A., Co. Bluffs, Ia.
Johnson, A. C., Omaha.
Johnson, H. F., Omaha.
Johnson, J. A., Omaha.
Jonas, A. F., Omaha.
Jones, Wesley, Omaha.
Kadavy, G. J., Omaha.
Kani, M. A., Omaha.
Keegan, J. J., Omaha.
Kennedy, C. R., Omaha.
Kelley, Ernest, Omaha.
Kelley, J. F., Omaha.
Killins, W. A., Omaha.
Kinyoun, F. H., Omaha.
Kirk, E. J., Omaha.
Kuhlman, Fred, Cumberland, Wyo.
Kleyla, J. R., Omaha.
Knode, A. R., Omaha.
Koutsky, J. W., Omaha.
Koutsky, John W., Omaha.
Kully, B. M., Omaha.
Langdon, J. F., Omaha.
Lanhier, V. A., Omaha.
Lathrop, M. E., Omaha.
Lemere, H. B., Omaha.
Lennox, G. B., Omaha.
Levey, Philip, Omaha.
Lindquist, A. B., Omaha.
Lindquist, A. L., Omaha.
Lord, J. P., Omaha.
Lovely, F. I., Omaha.
Luikart, R. H., Omaha.
Lynch, Delia, Omaha.
Macrae, Donald, Jr., Co. Bluffs, Ia.
Magaret, O. H., Papillion.
Manning, E. T., Omaha.
Marble, R. E., Omaha.
Martin, J. W., Omaha.
Martin, Otis, Omaha.
Mason, C. W., Omaha.
Mauer, R. T., Omaha.
Maxwell, J. T., Omaha.
McArthur, H. J., Omaha.
McCarthy, J. S., Kalamazoo, Mich.
McClanahan, H. M., Omaha.
McCleneghen, Sam, Omaha.
McDairmid, S. B., Omaha.
McDermott, B. A., Omaha.
McDonald, J. F., Omaha.
McGee, H. E., Omaha.
McGee, J. W., Omaha.
McGuire, L. D., Omaha.
McKean, J. W., Chiengmai, China.
McLeay, H. L., Omaha.
McMartin, Chas., Omaha.
MacQuiddy, E. L., Omaha
Medders, D. A., Omaha
Melcher, W. H., Omaha
Mercer, N. S., Omaha.
Miller, A. J., Omaha.
Miller, Glen, Omaha.
Miller, H. C., Omaha.
Milroy, W. F., Omaha.
Minthorn, M. L., Omaha.
Molseed, C. S., Omaha.
Moody, W. B., Omaha.
Moon, C. F., Omaha.
Moon, L. E., Omaha.
Moore, Clyde, Omaha.
Moser, R. A., Omaha.
Muldoon, J. K., Omaha.
Murphy, F. P., Omaha.
Murphy, J. H., Omaha.
Murray, F. J., Omaha.
Muskin, Nathan, Omaha.
Nemec, C. J., Omaha.
Neuhaus, George, Omaha.
Newman, J. K., Omaha.
Newell, C. H., Omaha.
Niehaus, F. W., Omaha.
Nilsson, J. R., Omaha.
Nolan, W. J., Omaha.
Overgaard, A. P., Omaha.
Owens, C. A., Omaha.
Owen, D. R., Omaha.
Owen, F. S., Omaha.
Parsons, Anthony, Valley.
Parks, A. L., Omaha.
Patton, J. M., Omaha.
Pedersen, Emil, Omaha.
Peterson, A. O., Omaha.
Pinto, A. S., Omaha.
Pollard, C. W., Omaha.
Porter, E. R., Omaha.
Potter, G. B., Omaha.
Potts, J. B., Omaha.
Powell, E. W., Omaha.
Pratt, George, Omaha.
Prichard, G. W., Omaha.
Pruner, A. C., Omaha.
Pruner, W. H., Omaha.
Pulver, J. E., Omaha.
Quigley, D. T., Omaha.
Quigley, W. H., Omaha.
Rance, W. T., Omaha.
Ravitz, S. E., Albia, Iowa.
Read, P. S., Omaha.
Redfield, W. J., Omaha.
Reed, Stanley, Omaha.
Rice, Raymond, Omaha.
Rich, C. O'N., Omaha.
Riley, B. M., Omaha.
Rix, Rudolph, Omaha.
Roark, G. L., Omaha.
Rocder, C. A., Omaha.
Romanek, P., Omaha.
Ross, W. L., Omaha.
Ross, W. L., Jr., Omaha.
Rubendahl, Clarence, Omaha.
Rubnitz, A. S., Omaha.
Russell, R. S., Sutherland.
Russum, B. C., Omaha.

Sachs, Adolph, Omaha.
Sage, E. C., Omaha.
Sawyer, R. E., Omaha.
Scheidegger, E. E., Omaha.
Schleier, F. J., Omaha.
Schalek, Alfred, Omaha.
Schindel, R. E., Omaha.
Schmitz, W. H., Omaha.
Scoins, W. H., Omaha.
Schrock, R. D., Omaha.
Schulte, H. von W., Omaha.
Scott, F. W., Omaha.
Secord, D., Omaha.
Sedlacek, F. A., Omaha.
Shramek, J. M., Omaha.
Shearer, W. L., Omaha.
Sher, Philip, Omaha.
Simanek, G. F., Omaha.
Simmons, E. E., Omaha.
Simpson, J. E., Omaha.
Smith, R. A., Omaha.
Somers, A. B., Omaha.
Srb, A. F., Omaha.
Stastny, Olga, Omaha.
Stearns, R. J., Omaha.
Steinberg, A. A., Omaha.
Stefano, C. De., Omaha.
Stokes, A. C., Omaha.
Strickland, W. R., Omaha.
Sucha, W. L., Omaha.
Sullivan, H. T., Omaha.
Sullivan, J. P., Omaha.
Sullivan, K. O. C., Omaha.
Summers, J. E., Omaha.
Sumney, H. E., Omaha.
Swab, C. M., Omaha.
Swoboda, F. J., Omaha.
Taylor, W. H., Omaha.
Thompson, C. Q., Omaha.
Thompson, W. Y., Omaha.
Thomsen, J. H., Omaha.
Tomlinson, C. C., Omaha.
Torpy, T. W., Omaha.
Towne, S. R., Omaha.
Traynor, R. L., Omaha.
Tyler, A. F., Omaha.
Ulrich, C. F., Omaha.
Updegraff, H. L., Omaha.
Uren, C. T., Omaha.
Van Camp, L. B., Omaha.
Van Fleet, E. A., Omaha.
Vance, J. H., Omaha.
Vetter, J. G., Omaha.
Walker, W. H., Omaha.
Waters, C. H., Omaha.
Wearne, F. J., Omaha.
Weinberg, J. A., Omaha.
Wherry, W. P., Omaha.
Whitcomb, G. D., Omaha.
Wigton, H. A., Omaha.
Wilson, D. J., Omaha.
Winterson, G. C., Omaha.
Wohl, M. G., Omaha.
Wood, I. C., Omaha.
Young, Alex, Omaha.
Young, Alex G., Omaha.

OTOE

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Edmonds, Wm., Nebraska City.
Fegers, G. W., Nebraska City.
Gibbon, W. D., Dunbar.
Gilligan, J. P., Jr., Nebraska City.
Ginn, A. P., Nebraska City.
Hillis, W. E., Syracuse.
Kenner, W. C., Talmadge.
Koser, M. J., Nebraska City.
Kintner, A. R., Nehawka.
McVean, M. M., Nebraska City.
Raben, Emil, Nebraska City.
Smith, I. L., Syracuse.
Stonecypher, D. D., Nebraska City.
Thomson, J. L., Syracuse.
Weeks, Thomas, Talmadge.
Yager, W. S., Nebraska City.
Zimmerer, C. G., Nebraska City.

PAWNEE

Anderson, A. B., Pawnee City.
Boyer, W. R., Pawnee City.
Flory, P. J., Pawnee City.
Harman, L. D., Pawnee City.
Harvey, H. M., Gothenburg.
McCrea, E. L., Table Rock.
Prendergast, J. F., Steinauer.
Robertson, A. T., Dubois.

PHELPS

Banister, W. B., Holdrege.
Brewster, F. A., Holdrege.
Case, E. S., Curtis.
Clark, G. W., Bertrand.
Long, Rachel W., Holdrege.
Magill, J. L., Holdrege.
Magill, V. H., Curtis.
Palmer, K. P., Holdrege.
Peterson, Theo., Holdrege.
Robertson, Wm., Holdrege.
Sundbury, P. A., Holdrege.

PLATTE

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Bald, A. A., Platte Center.
Campbell, C. H., Columbus.
Cyphers, F. B., Duncan.
Elston, Harry, Humphrey.
Evans, C. D., Columbus.
Evans, C. D., Jr., Columbus.
Evans, J. N., Columbus.
Evans, W. S., Columbus.
James, M. C., Columbus.
Koebbe, E. E., Columbus.
Lemar, F. A., Humphrey.
Lueschen, A. G., Columbus.
Martyn, D. T., Jr., Columbus.
Martyn, D. T., Sr., Columbus.
Meyer, J. E., Columbus.
Morrow, F. H., Columbus.
Neumaker, W. R., Columbus.
Tiesing, B., Columbus.
Voss, L. C., Columbus.
Walker, D. G., Lindsey.

POLK

Edstrom, A. J., Stromsburg.
LeMar, C. L., Osceola.
Malster, J. C., Stromsburg.
Shaw, L. M., Osceola.
Smith, D. J., Osceola.

RED WILLOW

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Brown, D. F., McCook.
DeMay, G. A., McCook.
Easterday, E. M., McCook.
Hill, J. S., McCook.
Humes, H. C., Hayes Center.
Kay, Z. L., McCook.
Knox, W. E., McCook.
MacKechnie, W. D., Indianola.
Morgan, D. H., McCook.
Reed, R. R., McCook.
Ryan, M., Danbury.
Willis, J. M., McCook.

RICHARDSON

Andrews, G. M., Stella.
Blakely, N. H., Auburn.
Cowan, S. D., Falls City.
Egermayer, G. W., Shubert.
Fordyce, C. P., Falls City.
Gandy, G. G., Humbolt.
Gillispie, J. C., Falls City.
Greene, J. M., Falls City.
Hays, E. R., Falls City.
Henderson, R. G., Falls City.
Hinkle, W. I., Barada.
Hustead, C. L., Falls City.
Lang, O. F., Falls City.
McArdle, G. M., Salem.
Meadler, C. A., Verdon.
Miner, H. R., Falls City.
Montgomery, A. W., Stella.
Nelson, F. A., Dawson.
Novak, C. E., Humbolt.
Reneker, G. W., Falls City.
Shepherd, J. C., Rulo.
Shepherd, Wm., Rulo.
Shook, W. E., Shubert.
Waggoner, J. A., Humbolt.
Wilson, M. S., Falls City.

SALINE

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Brenn, C. P., Western.
Cerny, Joseph, Wilber.
Conrad, A. A., Crete.
Cross, G. B., DeWitt.
Hamilton, F. T., Friend.
Hein, Henry, Wilber.
Johnson, R. K., Friend.
Kalal, F. J., West Texas, Texas.
Kirchman, R. C., Wilber.
Panter, R. C., Dorchester.
Quirk, H. W., Crete.
Stejskal, F. J., Crete.

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Clark, B. H., Ashland.
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Dodd, C. L., Weston.
Hubenbecker, J. C., Morse Bluffs.
Kasper, J. E., Prague.
Kirkpatrick, C. F., Ashland.
Lauvetz, J. F., Wahoo.
Mansfelde, A. S., Ashland.
McCaw, F. W., Colon.
Noyes, W. W., Ceresco.
Smith, J. G., Wahoo.
Spradling, F. L., Valparaiso.
Tornholm, Frank, Wahoo.
Way, C. W., Wahoo.
Way, F. E., Wahoo.
Weber, E. O., Wahoo.

SCOTTS BLUFF

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Cooper, A. L., Scottsbluff.
Faulk, A. J., Mitchell.
Frank, C. H., Scottsbluff.
Griggs, E. E., Scottsbluff.
Hart, G. E., Lyman.
Harvey, W. C., Gering.
Hodnett, W. P., Scottsbluff.
Mitchell, E. J., Scottsbluff.
Nichols, Edwin, Scottsbluff.
Plehn, F. W., Scottsbluff.
Pugsley, G. W., Bayard.
Rasmussen, N. H., Scottsbluff.
Riddell, Ted, Scottsbluff.
Ross, A. J., Jr., Minatare.
Schrock, J. B., Scottsbluff.
Shike, W. E., Gering.
Stewart, A. J., Mitchell.
Stoops, J. N., Scottsbluff.
Townsend, A., Minatare.
Vanderhoff, I. J., Scottsbluff.
Watson, C. R., Mitchell.
Weyrens, J. P., Scottsbluff.
Witter, R. V., Bayard.
Young, F. B., Gering.
Zoerb, E. F., Scottsbluff.

SEWARD

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Cummins, H. B., Seward.
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Hayes, Noah, Milford.
Lee, L. H., Seward.
Meisenbach, J. E., Staplehurst.
Morrow, B. E., Seward.
Morrow, Joseph, Seward.
Muir, J. G., Milford.
Nickum, O. E., Seward.
Sandusky, Wm., Seward.
Wertman, H. J., Milford.
Williams, Beaver Crossing.

THAYER

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Bowles, E. A., Hebron.
Bowles, Loretta, Hebron.
Decker, R. F., Byron.
Mountford, F. A., Davenport.
Mullikin, D. B., Chester.
Newell, H. J., Alexandria.
Panter, S. G., Jr., Hebron.
Reed, P. A., Deshler.
Saylor, H. W., Bruning.
Schafer, M. F., Alexandria.
Snowden, C. C., Davenport.
Stretton, H. H., Chester.
Westerhoff, J. G. W., Carleton.

VALLEY

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Barta, F. A., Ord.
Clark, E. E., Burwell.
Langrall, C. D. D. M. M. S., Arcadia.
Lee, D. R., Arcadia.
Miller, C. J., Ord.
Pinckney, C. E., North Loup.
O'Neill, S. H., Blue Hill.
Osheroff, S. A., Ericson.
Smith, E. J., Burwell.
Weeks, C. W., Ord.

WASHINGTON

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Hinchman, J. V., Blair.
Langstaff, G. A., Winnepeg, Canada.
Murdock, R. J., Blair.
Nielsen, Morris, Blair.
Stewart, E. R., Blair.

WEBSTER

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Cook, Henry, Red Cloud.
Creighton, E. A., Red Cloud.
Martin, R. S., Red Cloud.
Reed, H. S., Guide Rock.
Stockman, J. W., Red Cloud.
Wegman, Wm., Bladen.

YORK

Bell, H. O., York.
Bell, J. S., York.
Eckles, W. F., York.
Gairdner, T. M., Waco.
Hanna, E. R., York.
Hylton, W. N., Gresham.
King, D. D., York.
McKinley, J. C., York.
Moore, O. M., York.
Morris, F. S., McCool.
Morrison, G. A., Bradshaw.
Plumb, J. N., York.
Prest, John, Trenton.
Root, B. A., York.
Snyder, F. G., York.

DRY CLINICS

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COMPRESSION FRACTURE OF THE SPINE

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Compression fracture of the spine may be defined as a disintegration of a vertebral body with the production of antero-posterior wedging. Compression fractures without lateral displacement rarely show spinal cord involvement but do show commonly nerve root irritation. In this discussion we are considering only the condition as seen with little or no spinal cord involvement.

The compression may be immediate or delayed; the latter type in our opinion coming under the affection described by Kummel(1) in 1895 as spondylitis traumatica. It has been demonstrated at necropsy(2) in this so-called Kummel's disease that minute fractures and hemorrhages into the bodies, laminae and articular processes of the spine occur, leading to a slow gradual compression of the vertebral body presenting the wedging as seen in the lateral x-ray. Kummel(3), in his second article, points out that the vertebral bodies become compressed according to the pressure exerted upon them, but if this force does not exceed a certain amount, the body resumes its original shape. However, this pressure has permanently damaged the delicate framework, disturbed the blood supply, and with the constant weight above, compression of the vertebral body occurs. In the mildest form there may be only a few fissures and hemorrhages into the spongiosa of the body which predispose to collapse by the superincumbent weight. These changes cannot be recognized clinically or by x-ray at the time of injury but become quite obvious after the occurrence of the secondary manifestations, which may not develop until several months or years after the trauma.

In immediate compression, the force is great enough to produce primary collapse of the vertebra, consequently early symptoms are more marked and the condition should be readily recognized.

The mechanism of injury in compression fracture is quite characteristic. It may be a fall from a relatively short distance alighting on the feet, buttocks, neck or head. An equal number apparently are produced by a "jack-knife" position as occurs especially in car accidents or in mines. Indirect violence as by lifting is very rare as a mechanism. However, there is reported(4) a case of a man attempting to lift a weight of about eleven hundred pounds, suddenly crying out with pain, being "frozen" in the position in which he was standing. Immediate x-rays revealed a compression fracture.

The site of fracture is dependent on the point of greatest stress and the region of the spine displaying greatest mobility. Therefore, it follows, that the great majority are in the dorso-lumbar region. In the seventeen case reports which follow, it will be noted that all but two of the fractures are found between the eleventh dorsal and second lumbar vertebrae.

The symptoms of this injury are fairly constant but differ somewhat in the two types. Where immediate compression has taken place, disability as a rule is complete for a time varying from a few minutes to several weeks. In the milder form, a back strapping often gives temporary relief and this may mislead the examiner as to the severity of the lesion. A constant and characteristic symptom following an unrecognized compression is persistent localized pain in the back. This is very frequently a burning type of pain. The second important complaint is back weakness and the inability to tolerate jarring of the trunk. Disability is variable but the usual is inability to do heavy work. Referred pain is very common, especially to the anterior abdominal wall and lower extremities; occasionally up the back into the neck and head. Not infrequently, due to the alteration in the normal physiological curvature of the vertebral column, the pain and tenderness may be noted in the lower spine. A few patients have no symptoms and the condition may be accidently discovered. In the delayed type, the patient may suffer pain and discomfort following the injury but not necessarily confined to bed. After the immediate effects have worn off, a symptom-free period exists, varying from several weeks to two or three years. In time a kyphus forms at the site of injury, backache develops and the clinical course follows closely that of the immediate untreated compression. These cases, sometimes, are very difficult to differentiate clinically from tuberculosis of the spine but the x-ray findings usually determine the diagnosis.

The clinical signs are extremely significant. The protective gliding gait and guarded motions are usually present. Inspection of the back reveals either the sharp kyphus resembling the knuckle of a Pott's disease or more frequently a generalized rounding. There is nearly always present some lateral deviation of the spine but in the minor compressions this is absent. In the lumbar region and in very muscular individuals, no deformity may be observed or there may be a localized flatness. On active motion, the range is limited in every direction. Backward bending is especially painful. Palpation discloses protective muscle spasm of variable degree and localized tenderness at the site of injury. Not infrequently, the clinical findings are so insignificant that one is very much surprised to discover a compression in the x-ray. In our group three cases were not considered suspicious clinically but the x-ray made the diagnosis. X-rays, showing bone detail, are the most important diagnostic measures; both antero-posterior and lateral views being essential. The latter exposure is of more value than the former and we think worth more than a stereoscopic view. A compression without lateral angulation may easily be unrecognized in the antero-posterior view as the posterior portion of the body is usually not altered and thus throws a shadow of full thickness on the film.

Cleary(5) gives some very salient reasons for the frequent mistakes in diagnosis. These may be briefly summed up as follows: The erroneous conception that every broken back and neck presents unmistakable signs, the failure to get a good history of the type of injury, an incomplete physical examination and lastly, the failure to get an x-ray.

The distinguishing point in the x-ray findings is the uniform smooth contour of the wedged vertebral body. New bone formation usually bridging two adjacent bodies is found in the old fractures and this is best seen in the antero-posterior view. Occasionally one is struck by the absence of any apparent attempt at repair. These findings are in contrast to the irregular destruction in the anterior portion of the body as seen in tuberculosis of the spine. Perivertebral thickening as a spindle shaped soft shadow in the region of the active process exists early in tuberculosis(6) and is characteristic while in compression fracture, it is absent. Thinning of the intervertebral discs may be seen in either condition.

Rupture of interspinous ligaments may occur in types of injuries similar to those producing compressions. Here the kyphosis disappears on lying down and the x-ray is negative. Typhoid spine, metastatic carcinoma, osteoarthritis and Charcot spine may be mentioned as possible sources of error but the history and detailed examination should make distinction possible.

The treatment of this condition is either conservative or radical. Albee(7) feels that these cases should always have immobilization by operative fixation, preferrably with a tibial graft. He includes in the graft two posterior spinous processes above and below the compressed vertebra. The only external fixation used is the dorsal recumbent position on a firm bed. At the end of six weeks, the patient is allowed up without back support. Giest(8) divides the treatment into that of fresh cases and the old unrecognized ones presenting symptoms. He is not an advocate of any one procedure but feels that in the majority of cases, conservative means in the form of a fixation corset is the better method. However, he recommends the ankylosing operation in select cases. Thorndike(9) gives a very complete analysis of forty-seven cases of fractured spines of which twenty-three were of the compression type without cord symptoms. The method of treatment was conservative and quite uniform. The patient was immediately placed in a plaster bed for from one to three months following which a plaster jacket was applied in the recumbent position. The erect position was permitted at a variable time after the application of the jacket which was worn for approximately three months. A more permanent support in the form of a molded leather jacket was used in all cases for six months to three years. The end-results obtained by this author speaks well for conservative measures. Thirteen of the twenty-three cases were followed through. All these returned to full time work, nine to their former occupation and four to lighter duty. The range of time when they returned varied from five and one-half months to four years.

In the analysis of the seventeen cases coming under our observation during the past two years certain interesting features have been noted. Three of the group were treated by us from the beginning, the other fourteen were seen at dates varying from six weeks to seven years after the injury. Only one has been considered of the delayed type and she reported three years after a fall from a second story window. X-ray study of this case in competent hands at time of injury revealed no evidence of bone pathoogly. Two years later she developed back pain, weakness and noted an increasing stoop. One year from onset of symptoms she presented a moderate generalized kyphosis, limitation of motion and the x-ray revealed mild compressions of the twelfth dorsal and second lumbar vertebrae. This patient was entirely relieved by a plaster cast followed by an efficient brace, and three months after beginning active treatment was doing housework with but little difficulty. Seven of the patients were compensation cases, five at this date having made a settlement while two are still under treatment. The permanent partial disability of all these compensation cases under the most favorable circumstances, we consider to be not less than forty per cent and some as high as seventy-five per cent, depending upon their former occupation.

The males in the group, eleven in number, were of the heavy stocky type. We think this significant especially where the mechanism of the injury has been a fall on feet, buttocks or head. The six females all received severe injuries. Four were sharply jack-knifed in automobile accidents while two fell from second story windows alighting on the cervical spine. The one patient with compresison of the sixth cervical vertebra dove into shallow water. There is also in this case a vertical linear fracture of the body of the same vertebra.

The site of fracture has been unusually constant and verifies the statement made earlier in the paper.

SITE OF FRACTURE

Dorso-lumbar Region	11th dorsal	1
	12th dorsal	5
	1st lumbar	7
	2nd lumbar	4
		17
	8th dorsal	1
	6th cervical	1
		2

Two cases presented double compression accounting for a total of nineteen fractures.

The symptoms of this group of cases coupled with the previous diagnosis and preliminary treatment offer some interesting detail.

SYMPTOM ANALYSIS

Complete disability	11
Partial disability	6
Localized burning pain	12
Indefinite backache	4
No pain	1
Referred pain	12
Previous diagnosis	
Correct	8
Back strain	5
Contusion	1
No diagnosis	3
Preliminary treatment	
Strapping	3
Cast and bed	6
Physiotherapy	1
No treatment	4
	14

The plaster immobilization and bed rest in those recognized early varied from two weeks to one month which is inadequate for bone repair.

SIGNS

1. Deformity	
Sharp kyphus	3
General kyphosis	5
Increased lordosis	1
Trunk list alone	3
No deformity	5
Lateral deviation plus above deformities	10
2. Limited range of motion	14
3. Protective muscle spasm	17
4. Tenderness	
Level of lesion	13
Below lesion	3
No tenderness	1
5. Cord Signs	
Nerve root irritation	6
Motor and sensory disturbance	3
No neurological findings	8
6. Positive X-ray Findings	
Lateral view	17
Antero-posterior	6
Lateral angulation	13
*Double compressions	2
*(12th D. and 2nd L.)	
(12th D. and 1st L.)	

Our treatment of the cases directly under supervision from the onset follows closely that advocated by Thorndike as discussed earlier in the paper. Immobilization on a Bradford frame or plaster bed with increasing hyperextension is the first step. If a plaster bed is used, it should be made to include the head and extend to the lower thigh; this gives adequate immobilization. An anterior shell is also desirable so that the patient may be turned over without disturbing the spine. Fixation in a well fitted properly padded plaster cast applied in the recumbent position is desirable in those cases which have had bed treatment for there is less danger of syncopy and less chance to disturb the fracture. However, in ambulatory cases, head traction in the erect position when the cast is applied is very satisfactory and requires less apparatus. For the more permanent supporting appliance, we favor the molded leather jacket with or without shoulder props depending upon the site of fracture.

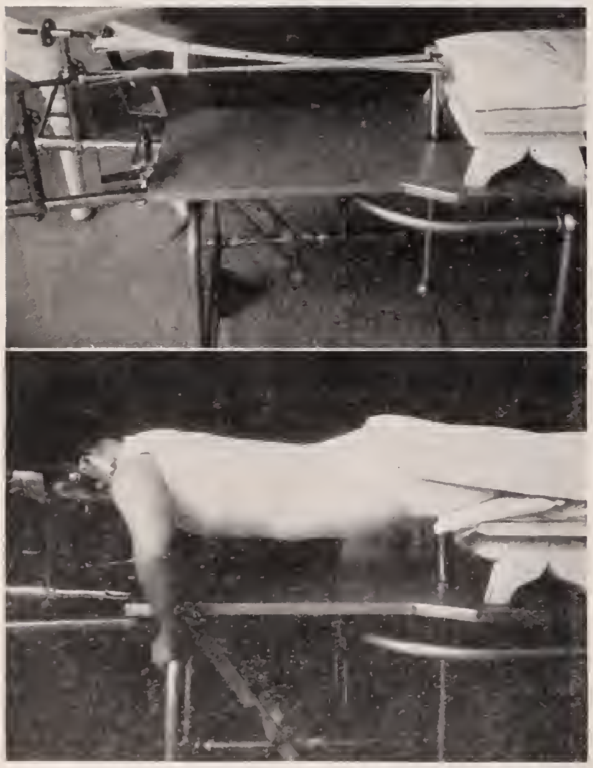


Fig. 1. Special Hawley table attachment for applying body cast in the recumbent position. Devised by Dr. J. P. Lord.

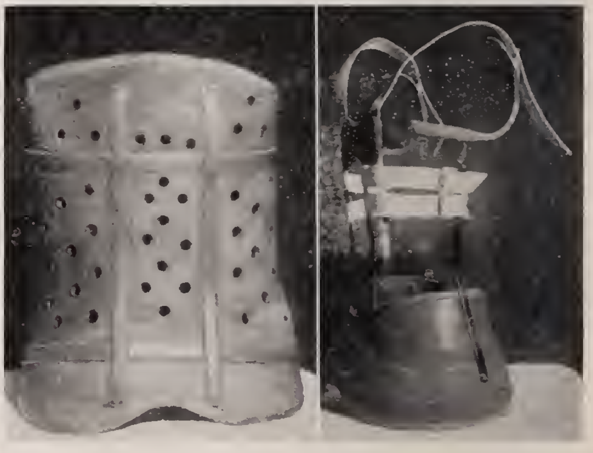


Fig. II. A—Molded leather jacket used as the permanent supporting appliance. B—Arm Crutch brace, also very satisfactory.

TREATMENT

Open operation—Not fusion	1
Plaster bed or frame—4 weeks	3
Plaster cast—3 to 6 months	8
Back brace—1½ to 3 yrs.	14
No treatment	3

We will very briefly give two case reports in order to bring out our method of treatment and the results obtained to date.

Case No. 1: A girl of sixteen years was jack-knifed in an automobile accident. She was unconscious for a short time and completely disabled. Examination by us four days after the injury revealed a marked kyphus at the dorso-lumbar region. Neurological findings were negative. The x-ray revealed a marked compression fracture of the twelfth dorsal with backward displacement so that the superior facets of this vertebra were about three-fourths of an inch posterior to the corresponding inferior facets of the eleventh dorsal. Treatment consisted of immobilization on a Bradford frame in hyperextension with head and pelvic traction. This improved the wedging but as the entire vertebral body was still displaced posterior, open operation was advised. At operation, great difficulty was encountered to reduce the dislocation which was accomplished by first sharply flexing the spine, then by instrument traction on the eleventh spinous process and pressure on the twelfth, and hyperextending the spine as the articular facets assumed their original positions, reduction was obtained. A plaster bed was then molded with the spine in extreme hyperextension. At the end of three weeks a

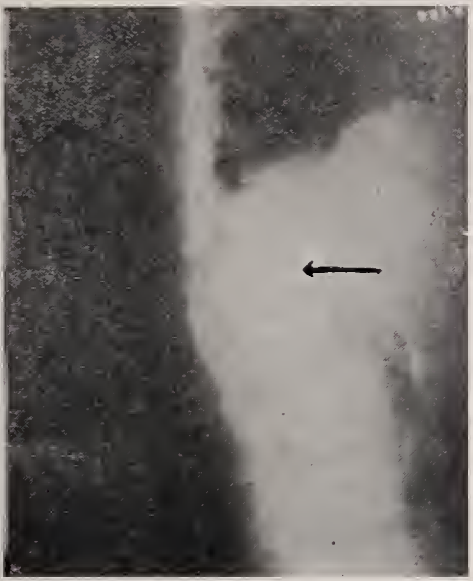


Fig. III. X-ray of case 1. Note marked wedging and posterior displacement of twelfth dorsal vertebra.

body plaster was applied. She was allowed to sit up four months after operation and on her feet two months later. At the end of six months she was placed in a brace and when last examined, one and one-half years after injury, there was present a slight kyphus, no limitation of motion, and no tenderness. She was working full time in office and home without symptoms.

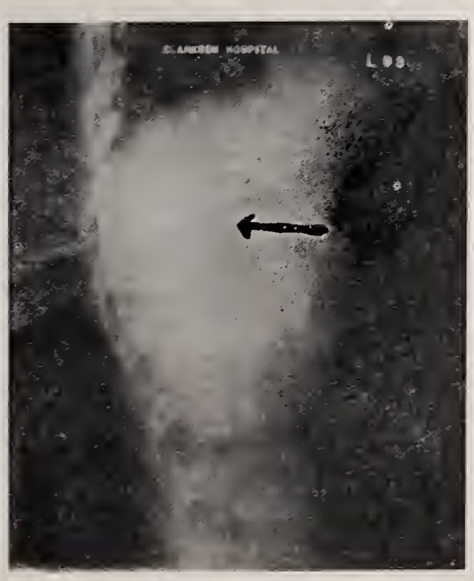
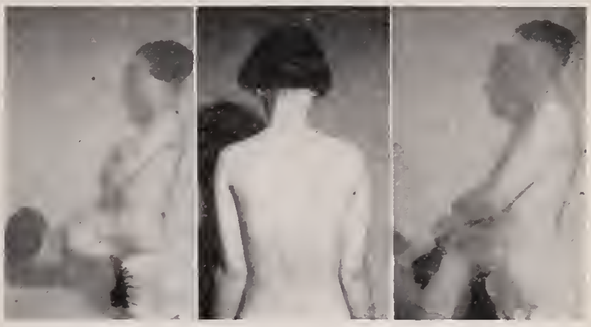


Fig. IV. Case 1 six months after operation.

Case No. 2: A farmer, age twenty-eight years, fell from a hay-mow, a distance of sixteen feet, and was jack-knifed in a manger. He was able to walk to the house with assistance and was confined to bed three weeks, during which time his back was strapped. When allowed up, pain and back weakness was so marked that an antero-posterior x-ray examination was made but nothing definite made out. He was seen by us six weeks after the injury and presented a definite kyphosis in the dorso-lumbar region with limitation of motion and localized tenderness. The lateral x-ray revealed a rather marked compression fracture of the first lumbar. He was placed in a body cast for two months and instructed to spend at least three-fourths of the time in bed. At present, one year after his injury, he is moderately active superintending his farm work; his chief complaint being burning pain at the site of fracture. The last x-ray of his spine demonstrates a bony bridge extending from the anterior margin of the twelfth dorsal to the second lumbar which forms a very good internal splint for the compressed first lumbar.



A B C

Fig. V. A—Case 1, showing range of motion 18 months after injury. B—Case 1, posterior view same date as A. C—Case 2, showing range of motion one year after injury.

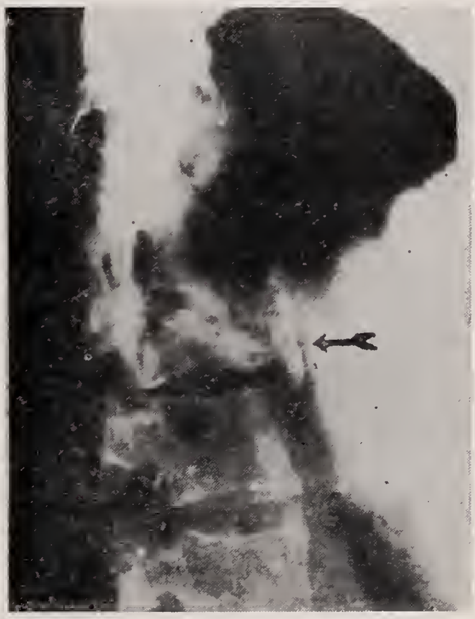


Fig. VI. Case 2. Note bone bridge extending from twelfth dorsal to second lumbar.

I think we can safely say that where new bone formation is quite active as in this case, the permanent disability will be much less. However, in cases where this reparative power is not evident and symptoms persist, we feel that an ankylosing operation is indicated if the patient is a good surgical risk.

It is too early in the majority of the cases studied to accurately tabulate the end results and we hope at a later date to supplement this preliminary report.

END RESULTS

Duration	No. pts.	Return to former occupation		Light Duty	No Work	Symptom Free	Pain Weakness (variable)
2½ yrs. plus	7	5	2 laborers 1 office work 2 housework	1	1	5	2
1½ yrs. plus	2	2	Cement finisher Office work			1	1
6 mo. plus	6	3	Switchman Office work Contractor	2	1	1	5
3 mo. plus	2	0		0	2	2	(In plaster casts)
	17	10		3	4	9	8

—482 Aquila Court.

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DISCUSSION

J. P. LORD, M. D., (Omaha): Dr. Johnson has covered this subject, I think, so well there is very little for me to add. The most conspicuous thing is this large number of undiagnosed cases, and the number of cases that have continued under ordinary or ineffective treatment; and that we all need to have our senses quickened in the matter of suspicion of those relatively grave injuries. Of course, those cases which present graver symptoms are diagnosed; but in any severe injury with symptoms referable to the back, it seems to me we, as a profession, should insist upon x-ray, more particularly lateral x-ray. Some of these cases had anterior-posterior x-rays, and this was the reason the injuries were overlooked.

It is a sad commentary on those of us who make such a mistake, because these people have an actual injury. They are often told by the examining physician they are not seriously hurt, until finally somebody makes the diagnosis.

The treatment is relatively simple, as indicated by the essayist, after the diagnosis is made. It hinges upon the diagnosis. This is my message this morning: That everybody who has the observation of such cases should not allow himself to slip in making a diagnosis at first.

J. E. M. THOMSON, M. D., (Lincoln): The importance of this subject cannot be too greatly stressed. There is no condition which we meet that brings us such disabilities as back injuries, and particularly in this day of compensation, because it surely is the day of compensation, we cannot afford to let these back injuries slip by without recognizing them. The best of us miss them at times, but we should not. I blame myself always when I overlook a condition of this character.

It was only about three years ago I showed a case of Kummel's disease on this platform in a farmer who had not had a serious injury — a fall from a moving farm implement — and a year and a half afterward he developed symptoms of acute irritation, tenderness localized, and a complete picture, as Dr. Johnson has brought out. The only thing for that man was to have that region immobilized. He was not as fortunate as the patient shown with a vast amount of bone repair that came after a period of immobilization and rest. He had had no treatments.

There are a certain number of these cases we must diagnose from the standpoint of what their disabilities will be in future, and we must recognize it early. We must have conservatism in these cases. They must be kept immobilized for a long enough period. I am afraid we cannot say the period could be too long, because more often our mistake is not making it long enough.

There are those cases, as Dr. Johnson has brought out, that must have fixation by operative measure. There is a question that always comes up. At the present time we have in the hospital four cases of compression fractures of the vertebrae. Two of them are cases occurring within the last five weeks, the injury has occurred within five weeks, and they are in a recumbent position in plaster of Paris immobilization. They will stay for the appointed time. They are distinctly the type in which there is true compression of the vertebrae, with annihilation or disappearance of the normal arch. That is the type that is almost sure to get well and have relatively no disability; yet we know there are cases in that same group that ultimately will have to have operation. If we knew which ones, we would be glad to ankylose them in the first place and not wait a year before we decided an operation should be performed.

The other two are cases which have had their injury for a matter of years. One of them was untreated until he became so disabled he could not perform his former duties. He has never performed them since the injury. That case would have been much better had he been operated in the first place.

The last case is one which had adequate immobilization for six months in a cast, and up in a brace later; yet his symptoms persisted after immobilization was taken away. This case came before the compensation commissioner with a large amount of disability.

We do know those cases that have to be operated, a fusion or bone graft operation, do by immobilization of vertebrae above and below, including the one that is injured, having relatively less disability in their end results.

However, we must diagnose these things. The importance of x-ray cannot be stressed too much. A thorough examination of the patient must be carried out. It is surprising — I would not dare say the percentage of cases that come to us in an undiagnosed condition, who are disabled men. I speak of all the orthopedic surgeons in the country.

You do not have to have a very severe injury to have a compression develop that will be recognized at the time or shortly after the injury. Do not overlook the fact a man can have a relatively minor injury and have a compression fracture of his vertebrae, particularly in this region.

I want to thank the doctor for his splendid presentation. I have enjoyed the paper very much.

H. F. JOHNSON, M. D., (closing): I have nothing further to add except to say I am glad Dr. Thomson brought out more strongly the operative treatment in selective cases. There are certain types with no evidence of bone repair, in which fixation operation is the method of choice.

THE RELATION OF FOCAL INFECTION TO SYSTEMIC DISEASE*

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The relation of focal infection to systemic disease has been recognized for more than 100 years(1), but it is only within this last couple of decades that the research scientists have put it upon a more definitely established basis. A large amount of clinical and experimental data has been accumulated, but since some of the experimental findings in animals do not precisely parallel the clinical cases we must be careful in our deductions. There are certain clinical and experimental factors underlying the subject and it shall be my aim to discuss these rather than follow up details. To understand the relationship we must understand the things related, so I shall attempt to outline those factors involved in the make-up of a primary focus and dissemination from such a point.

A focus of infection is a circumscribed region in which pathogenic microorganisms multiply within the tissues(2). The primary focus is the one in which we are now interested as it is the source from which the systemic manifestations have their origin. Focal infections may be primary, secondary, tertiary, etc., but we usually only refer to the primary and secondary as a tertiary would be secondary to its predecessor.

Normally the human body is well protected against bacterial invasion by means of the cornified skin, the mucous membranes, and body fluids which cover certain areas as the cornea, bladder wall, etc. This protection serves the body so long as there is continuity of the epithelium and the quantity and virulency of the bacteria are not overwhelming. This simple defensive mechanism is commonly called the primary defense. There are times when the bacteria pass directly through the surface epithelium and establish their focus of infection. This has been demonstrated by the experiments of von Kleck and Wood. The epithelial cells aside from their mechanical protection, have a definite zymotic action which is probably on the cells' outer portion. There seems to be quite a definite suspicion that this is one of the sources for the development of immunity against specific bacteria. That the mucous membranes are more often infected is well agreed, because of the lack of cornified epithelium, and the moisture, temperature and texture of the surface covering. From this it at once becomes evident that the mouth, pharynx, larynx, bronchi, gastro-intestinal, and genito-urinary tracts, will be the most often affected by the primary infection. This is due to the bacteria inhaled and with the possibility of abrasion during the process of mastication the possibilities become even more pronounced. Any place through which the bacteria gain entrance is spoken of as a portal of entry. The causes for these portals of entry may be: Frequent mechanical trauma, low resistance of the surface tissue, continued exposure to infecting agents, virulency and numbers of bacteria present, and factors such as heat, moisture, reaction of the tissues, and oxygen supply which govern the rate of growth and pathogenicity of the organisms. Some organisms have the power to penetrate any mucous membrane tissue e. g. the treponema pallida and the gonococci, both of which readily overcome the tissue resistance and make their entrance into the system. Briefly then this will suffice for the primary defense mechanism.

The surface tissues having failed to keep out the bacteria, the body is now required to bring in other means of protection in order to keep the invaders in check. This process involves the sequence of events called inflammation. As the bacteria invade they give off substances which when picked up by the blood stream produce a positive leucocytic chemotaxis in the affected area(3). The inflammatory process attacks the bacteria first by the body fluids, by direct attack on the bacteria by the phagocytic cells, and lastly by walling off the area with fibrous tissue. When the latter takes place we have a focus of infection established. Occasionally an extremely virulent organism makes the attack and before the body can wall off the area, it has spread through the entire system. These infections will not be considered here as they are usually fulminating infections(4) seen in epidemics and puerperium. The above inflammatory process is usually spoken of as the secondary body defense mechanism and we will study this further under our consideration of the bacterial invaders.

The bacterial invaders may be any pathogenic bacteria entering through the surface tissues, and even in some instances saprophytic bacteria gain entrance later to acquire virulent powers(5) (6). This latter fact can be very easily demonstrated by animal experimentation. To name all of the bacteria which might be responsible for focal infection will not be necessary since there are a common few responsible for the majority of the recognized conditions. The most common ones are those of the streptococcus pneumococcus group, the diphtheroid groups, colon group, and staphylococcus. Rosenow, Hartzell, and Henrici have done an immense amount of research upon the streptococcus-pneumococcus strains and they have isolated probably a couple of dozen different ones in all. Rosenow studied them under such conditions as they are found to exist in the body tissues as aerobic, anaerobic, and gradient oxygen tensions. He has been successful in storing his cultures for as long as twelve years and by successive passage through animals raising their virulency back to that of their original standard(5).

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*Prize Thesis, senior class, 1926, Creighton University, College of Medicine, Omaha, Nebr.

Before we come to the reproduction of the bacteria in their focus we will study tentatively the reaction of the body tissues to the presence of the bacteria. First of all the bacteria are foreign protein and as such the body cells at once initiate means for getting rid of them or of limiting their harm by furnishing neutralizing agents for the bacterial toxins thrown into the blood stream(7). The tissue cells are stimulated to the manufacture of antibactericidal substances in the form of agglutinins, precipitins, bacteriolysins, etc., depending upon the bacteria responsible for the invasion. The degree of this antibacteriacidal reaction depends upon the invading bacteria, their virulency, the relation of time to their presence, the anatomical construction of their focus, and the degree of resistance shown by the tissue. For example, in typhoid the invasion is rapid from the start because the virulency of the invader is sufficiently overwhelming to overcome the tissues which have not had time to produce the necessary amount of agglutinins for the blood stream. We shall study the typhoid invasion later in the work in regard to the selectivity of tissues by bacteria. The relation of virulency to antibody production is usually in a proportion—this depending upon the grade of organism. The element of time has a place in the reactions because we shall see that the longer the bacteria have been sending their toxic substances into the system the greater have been the efforts of the tissue cells to neutralize these substances, thus causing a drain on the vitality of the body as a whole and lowering resistance against other infections. People carrying chronic foci of infection for a length of time often state in their chief complaint that they have not had good health for years. This has been demonstrated from the case histories by many of the clinicians and experimenters, and further proven by the complete recovery of health in those same patients where the foci were located and removed(8), (9), (10), (11).

The anatomical construction of the focal infection is an important factor in this subject. In the above I mentioned the fibrous walling off of the area as a secondary defense mechanism but I did not mention that into this wall were projected many new blood vessels giving the area the characteristics of granulation tissue. This is exactly what we find—especially in the root abscesses of non-vital teeth(12). With this the surgeon might disagree offering the argument that granulation tissue cannot long continue to be infected because of its proximity to the body's defense mechanism. In reply to this Duke states: "The organisms in granulation tissue or in chronic abscesses are exposed to the defensive mechanism of the blood, lymphocytes, leucocytes, connective tissue cells, etc., and in the course of time are perhaps destroyed by them. Organisms in the root canals of non-vital teeth, or in the little cavities in the necrotic portions of the root, however, are often safely removed from the defensive mechanism of the body and favorably located to repeatedly infect a granulating lesion around it(13)."

Unfortunately very few of the bacteria produce any appreciable degree of immunity, but instead the immunity seems to be well balanced neutralization of the bacterial substances. In support of the latter hypothesis we note that when chronic abcessed teeth are extracted we usually have an acute exacerbation and marked systemic complications which would indicate that the individual did not have enough reserve defense to overcome the sudden overdose of toxic material thrown into the system by opening up the foci. Such cases often develop acute rheumatic fever, acute arthritis, acute endocarditis, myocarditis or any of the many infections. Other foci of infection discharging bacterial toxins into the system, produce, instead of an immunity a sensitization(14) (15). Such a sensitization von Pirquet calls a predisposition. It is quite a common occurance for physicians to find certain patients who will show definite systemic symptoms as accelerated pulse, slight fever, joint or muscle pains, when the only physical findings may be an injected mucus membrane, the tonsils and other foci having been removed. This indicates a "predisposition" perhaps to that special strain of bacteria. Any of the pneumonias would be an example of a predisposition. Crowe's clinical observations on this phase of the subject are quite convincing(16) as are those of Irons and Marine in their army camp notations(17). These two latter men found that in some 300 cases of measles the men sustained a predisposition to infections of the respiratory tract—especially to those of the streptococcus-pneumococcus group.

These clinical instances of the development of lessened resistance due to protein sensitization resulting from the bacterial endotoxins have been substantiated by the laboratory experiments of Rosenow in which he showed that the extracts of the streptococcus hemolyticus sensitized guinea pigs to extracts of the pneumococcus and streptococcus mucosus. Davis(18) experimented on this same line and fully confirmed Rosenow's findings. From the above we see that as a result of the bacterial flora we have either an immunity or a sensitization produced. We can but touch lightly upon this because of the wide scope of the field yet we have the essential working principle of immunity and sensitization illustrated.

Now if the bacteria entering through the portal of entry were merely to reproduce and metastasize the process would not be so highly complicated, but there are many other factors bearing upon the bacterial environment which change their virulency, cultural characteristics, and give some additional specific powers as selective tissue affinities. These factors, usually found in the focus of infection, may be such as the degree of tension within the focus due to mechanical obstruction to natural drainage, vascularity of the area, bacteria living in symbiosis, and the virulency and numbers of the bacteria within the confined area. The streptococcus strains are the most common offenders in mouth infections and frequently they find such favorable conditions that they are able to increase their virulency. These bacteria are particularly sensitive to oxygen tension(19) and as often is the occurrence we will find aerobic microorganisms living within the same foci. These aerobes tend to utilize the oxygen supply and thus create the favorable oxygen tension or anaerobiosis in which the streptococcus strain so beautifully thrives and becomes more virulent. A great deal of classical experimentation has been done to demonstrate this point both clinically and in the laboratory, the results of the best men being the same. Very careful technique is required to perform the experiment successfully since the streptococcus from dental pockets is usually deep and the possibilities of surface contamination high. Rosenow's tall test tube broth cultures illustrate the cultural characteristics quite uniquely(20).

So far our considerations have been chiefly with the local tissue changes and the bacteria at this point, but we now come to the phase of the study where the bacteria themselves or their products are carried to other parts of the body giving rise to systemic complications. The bacteria in the primary foci metastasize to other parts by one of three routes—either by direct extension, by the lymphatics, or by the blood stream. The common opinion of investigators in this field is that the percentage of metastases by direct extension is extremely low and the extension not to distant points; that the metastases through the lymphatics is not uncommon, but that the vast percentage of the metastases is by way of the blood stream. The bacillus tuberculosis is now generally conceded to metastasize as far as a lymph node and perhaps after that into the blood stream(21) (22). The laboratory demonstrations by means of blood cultures on this particular phase has been so complete and satisfactory that I feel we need not devote any more space to its discussion.

Having studied the primary lesion in its essential facts we now come to those manifestations of systemic disease, secondary to the focal infection, for which the patient comes to see the physician. They are in all probability unaware of their primary focus, since as we shall later see, it is usually a non-vital tooth, tonsils, or their equivalent, which have suffered no impairment of drainage to the infected fluids, and thus due to lack of pressure have never produced pain. Their symptoms may vary from those of heart and lungs (dyspnoea, cyanosis, etc.), those of the so-called dyspepsias (ulcers, gallbladder involvements, appendices and colitises), those of the kidney (stones, nephritises, pyelitises, etc.) giving rise to back pain, and the so-called rheumatism (joint and muscle involvements), on up to the choreaform manifestations of nerve tissue involvements, with the usual history of their insidious onset.

That foci of infection, often insignificant and symptomless in themselves, are a cause of systemic disease is indicated by many facts. Clinical studies have shown that focal infections are present in demonstrable form in a high percentage of the sick, including children. Thorough removal of foci is followed by improvement in health and frequently by the improvement or cure of distant local and systemic diseases provided the changes were not too far advanced. "This improvement has occurred so often that physicians have come to regard these observations as proof of etiologic relationship, and if improvement does not follow the removal of the certain focus, it is considered either that the focus was not properly and completely removed or that other foci are present yet to be found." The idea of etiologic relationship is not new and the relief of systemic conditions following the removal of foci of infection was recognized before even the microscope was invented(1). Regardless of repeated suggestions of etiologic relationship, the medical and dental professions, for the most part remained indifferent until about 1912 when Billings(23)(24) launched his account of clinical and experimental observations demonstrating the importance of septic foci as sources of chronic infections conveyed by the blood stream. He discussed the dental foci along with the other sources of demonstrable foci. From this time up to the present the medical and dental professions have been stressing the relationship almost to its full worth. No doubt a great deal of guess work has been done in determining where foci really exist but we are concerned only with the results of men who have been careful to make their determinations with the roentenogram and other reliable means.

Early in the experimental work it was noted that the secondary localization of the bacteria depended a great deal upon the blood supply of the tissues. Clinicians know that arthritis, fibrositis(25), and endocarditis (especially of the valves) are probably the most common systemic manifestation of focal infection. The bacteria in fibrositis and endocarditis, and quite frequently in the arthritis are most frequently found to be the streptococcus viridans—a streptococcus of low virulency but of marked sensitiveness to oxygen tension. We know that anatomically the joint tissues are not well vascularized and that due to this poor vascularization there will be less oxygen in this area, less of the nutritive elements, and less of the body's blood defense mechanism to interfere with the bacterial habitation, thus affording the favorable environment for this particular organism to reproduce and thrive. The valves of the heart being poorly vascularized suffer the same results, as do all of the poorly vascularized tissues. Rosenow(26) in 1909 was the first to demonstrate endocarditis from a clinical dental case of streptococcus viridans, (and also one of staphylococcus), by injecting the strain intravenously into animals and demonstrating the bacteria in the lesion produced. Since that time nearly all of the men in the field have been able to do the same. The fibrositis is the secondary lesion which gives rise to a varied number of complications and the reason for this is evident. Any portion or organ in which fibrous tissue is conspicuous as in tendons, or interstitial tissues will be a possibility for secondary localization. Perhaps this is a reason that foreign bodies as non-absorbable sutures, metal plates, etc., often become the seat of infection due to the fact that they become encapsulated by the poorly vascularized fibrous tissue. It might give rise to any number of conditions, as nephritis, hepatitis, myositis, and so on.

The site of secondary focalization, while it is largely dependent upon blood supply, and possibly selective tissue affinity, may also be determined by the lack of local resistance, trauma, diathesis, or sensitizations. Exposure to cold and dampness, overwork and overfatigue, starvation and improper nutritive foods have long been recognized as important factors predisposing to general infection. A very interesting discovery in this connection was the work of Pasteur. He discovered that fowls, (naturally immune to anthrax) become susceptible to the disease if the body temperature is reduced by a cold bath. Parallel with this was the discovery of Charrin and Rogers that white rats (naturally immune to anthrax) become susceptible after they have been exhausted by physical exertion. Equally interesting are the observations relative to trauma that teamsters and hucksters most commonly have infectious arthritis in the hip joint which bears the greatest trauma when alighting from their vehicles. Diathesis must be admitted in some cases—with the emphasis perhaps on the heart cases. Sensitizations do play some part. Faber successfully sensitized the synovial membranes of the joint cavities in the rabbit so that subsequent injection of the live streptococcus produced a very severe arthritis(27). This may account for the fact that in some of the joint affections bacteria have not been demonstrable, thus leaving us to infer that the inflammation is perhaps due to the toxins from the bacteria exerting their influence upon sensitized tissues. In support of the bacterial cause of these joint affections we have the clinical fact that they clear up when the foci have been removed.

In our general considerations of secondary systemic manifestations I will mention something of selective tissue affinity attributed to the strains of bacteria since it seems to be fairly well supported. In this field there has been a notable amount of careful work done but it is here that we should be careful in our deductions. Some of the lesions produced have not as yet been established as due to a bacterial cause, e. g. gastric and duodenal ulcer; some of the lesions produced are not in high enough a percentage to be conclusive; some of the lesions can be produced by various other methods and reagents; and finally we cannot say that the action of the bacteria will be the same in a human body of many years existence as it will be in the rabbit of one year's age. For these reasons, therefore, I will not conclude from the voluminous statistics that the lesions are the ones produced in the human body nor that they are the only cause of such lesions. In reviewing the numerous experiments my opinion would lead me to believe that perhaps there is a definite percentage of clinical cases paralleled by the laboratory experimentation, but I feel that the conclusions of some of the men are most too sweeping.

Among the clinical cases selective tissue affinity is a recognized fact in some of the diseases. In typhoid for instance we know that the bacteria are in the blood stream yet they select the lymph follicles of the intestine to focalize within; in pneumonia the bacteria are in the blood stream yet they usually localize within the respiratory tissues; in meningitis the meningococcus usually attacks the nervous system and so on. We might enumerate many of the acute exanthematous diseases in which selective tissue affinity is a factor but the point is that it is upon this supposition that investigators have been experimenting to determine if these chronic foci of infection do not offer such conditions to bacteria to develop this affinity or to harbor those who already have this power. Forssner in 1902 recognized this affinity and to prove his observation he took non-specific streptococcus which had no predelection for kidney tissue and after culturing on kidney extract he injected it into dogs (intravenously). The dogs when autopsied showed the localization in the kidney tissues only. As an example of extreme specificity, elective localization occurred in the muscles and lungs of fetuses following intravenous injection of parent rabbits with strains having respective affinity for these structures. Localization occurred in the bundle of His in an animal injected with pyorrhea pus from a patient with impaired conduction not due to lues(28). The methods for demonstrating the affinity have been with an attempt to keep the bacteria in as nearly their original form as possible by using emulsions directly from the focus instead of cultured growths. Control animals were run simultaneously to avoid error. Upon these methods the tables of Rosenow have been prepared and I refer them as experimental data.

Along with the other evidence we also have some immuniologic evidence to bear out these men's conclusions that the lesions are secondary to some other foci. They have been able to agglutinate the bacteria isolated from the lesions by use of the patient's serum in a certain number of cases. These serum reactions, however, deal with the more virulent organisms rather than with the common low grade streptococcus viridans.

As I mentioned in the beginning, the scope of this thesis does not permit me to take up each lesion of the body which has for its etiology some focus of infection. Our discussion has been for the most part in a generalization. Another important factor which must be born in mind is that the secondary foci may become feeders to other systemic conditions after the primary site has been removed. An example of this would be a chronic appendix secondary to teeth or tonsils. The teeth or tonsils might be removed or corrected but the secondary focus, having been well established, would continue to give the patient systemic symptoms and little would have been accomplished by removing only one of the foci. The blood count in these conditions is nothing diagnostic in itself. We usually have some degree of anemia accompanied by a mild leucocytosis, probably seven to nine thousand, with the polymorphonuclears in high percentage.

Gall-bladders, appendices, and gastric ulcers form a triad which clinicians recognize as closely related. The appendix may receive the organism which gains virulency and infects the gastric mucosa, where it becomes more highly virulent and perhaps attacks the gall-bladder, according to the theoretical explanations offered by the investigators. From such places it is known that the bacteria attack the more vascular tissues such as the lungs, probably because they are more virulent and capable of establishing themselves in the vascular tissue. The symptoms of the above mentioned triad are too well known to enter into their discussion here. So far we have not considered the genito-urinary system as a source and receiver of infections. The prostate, seminal vesicles, and bladder may be a primary focus, especially true when we are considering a gonorrheal focus. This is one very good instance in which all men are agreed that to treat the systemic infection we must treat not only the systemic conditions but remove the feeding focus. The kidney tissue itself and its interstitial tissue are very often the secondary lesion to some primary focus elsewhere. Referring to the Rosenow's tables we find a high percentage of occurrences in animals when the patient's urine, kidney stones, and kidney tissue were used as infecting agents. Elective tissue affinity seems to play a particularly noticeable role in this particular organ. Meissner and Rosenow published quite an exhaustive set of experimentation results, in 1923, on the production of urinary calculi by devitalizing and infecting teeth in dogs, their results being quite impressive(29).

In dealing with the affections of the brain, cord, and nerves these men were able to reproduce with striking similarity the tics in rabbits by exposing their mucous membranes to the secretions from the nares and mouths of patients who already had the disease.

Having established the relation between focal infection and the systemic disease we naturally turn to the question, as clinical men, of where these foci are, which ones are the most common, and how are they best eliminated? I shall not concern myself with the latter as it does not come under the bounds of this thesis, except to say that the best manner is to remove them thoroughly, radically, and completely, or in the case of sinuses to drain freely. This work as we can see is mostly surgical. The most common sites of primary infection are teeth, tonsils, sinuses, adenoids, prostate, and seminal vesicles, this being the usual order of importance. No doubt the teeth and tonsils are the leading ones of all. Duke's tabulation of 1000 medical cases which they examined in consulting office practice because of miscellaneous systemic complaints gave the following results: Sources of chronic and frequently occuring infections 97%. A marked degree of oral sepsis was found in roentgenograms in 66%; in 34% either none or only a slight amount was found. Diseased tonsils seemed to be the source in a large percentage of cases. Sixteen per cent had nasal troubles, 16% had tenderness in the right iliac fossa, and 7% had symptoms referable to the gall-bladder. Thoma(30) found alveolar abscesses in 88% of his patients but these patients were in a hospital for chronic diseases while Duke's were ambulatory. In a report of 142 cases Irons found 44%. Of these the arthritic group showed abscesses in 76%, the nephritic and cardiovascular group 47%. Langstroth(10) found that in 30 gastric and duodenal ulcers, 44% showed definite alveolar abscesses(31). Van Valzah had occasion to examine 5,000 students at the University of Wisconsin and he found 42% of abnormalities in the tonsils. Da Costa says, "the tonsil, the prostate, the sinuses, and the mouth are the commonest regions involved. Beyond doubt oral sepsis is the chief cause of focal infection".(32) This is indeed the opinion of most surgeons and internists and I believe I would be but adding length to this manuscript to detail the percentages found by each man attributing to this field. The ones which I have quoted are probably near the average where the methods of determining have been the same. I have treated the subject thus far without stressing the tuberculous foci but there is perhaps one more important fact to be added: That tuberculous foci are thought to originate largely in the tonsils, and lymphoid tissue of the nasopharynx, from which they metastasize probably via of the lymphatics and blood stream to other parts of the body. It is frequently estimated advisedly that fully 50% of the tonsils removed are tuberculous. I say estimated advisedly for extensive reliable data are still lacking.

Lymphatic glands distended with tuberculous material often serve as feeders to other parts of the body and would thus be classed as foci of infection(33). The age of the patient has a distinct bearing upon the type of infection especially in the mouth and with reference to the teeth. The period of greatest danger from teeth is rated between 25 and 69 years. In 700 cases Moorhead found the incidence of teeth infections at these ages to be 69 to 80 per cent. In 50 cases of chronic arthritis Evans pointed out the lesion in 70%. Ulrich's examination of 1350 dead teeth showed 83% of them abscessed. Up to the 25 year mark the tonsils and lymphoid tissues are more apt to be the foci feeding the systemic conditions. Langstroth's study of cases at the University of California hospital demonstrated chronic focal infections in 84% of ulcer patients, in 66% of subacute cases of arthritis, in 73% of chronic cases of arthritis, and in 100% of the gall-bladder cases. The acute and subacute cases responded well after removal of the foci, even to the point of absolute cure. In many of the chronic cases the patients had less pain and no further progression of the disease(31).

In summarizing our survey of the relationship of focal infection to systemic disease we feel that the relationship is without doubt definitely established but that there are certain aspects of it which have not been accepted completely upon the experimental averages. The degree of relationship at anytime will depend upon such factors as we have mentioned: Drainage, oxygen tension, symbiotic bacteria, selective tissue affinity, increase in virulency of the organism, general resistance, local resistance, trauma, blood supply, immunity, sensitization, production of antibactericidal substances and possibly some which we may have missed. There is probably as much relation between the abcessed tooth and arthritis as there is between the primary chancre and secondary eruption, the scarlet fever rash to the primary source. The dissenters with the relationship are few. Physicians and surgeons have now come to recognize the relationship to the degree that if the systemic manifestations do not clear up with the removal of the focus it is either taken for granted that the original focus was not thoroughly and properly removed or that other foci remain independent or secondary to the primary one. The mere removal of a tooth does not constitute a clearing up of the primary focus, as all orthopedists and dentists will admit the necessity for surgical removal and scraping of the infected bone to rid it of the infection. Tonsil stumps due to faulty tonsillectomies are perhaps more dangerous than the original tonsils. The removal of an appendix secondary to an oral infection will do little good to the systemic condition if the primary source is not removed and vica versa. The treating of a bronchitis will avail nothing so long as a discharging sinus continues to feed it from above, and so on we could list all the possibilities but the point is that to relieve the systemic manifestations we must remove the cause whatever and wherever it may be. I do not believe that anywhere in the field of medicine and surgery do we have the relation of cause and effect more beautifully demonstrated than we have in the relation of focal infection to systemic disease.

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"One thing can never be learned, but this students of medicine must themselves bring with them as their best endowment in their future calling. All knowledge attains its ethical value and its true significance only by the humane sense in which it is employed. Only a good man can be a great physician. All your knowledge and ability receives the stamp of genuine nobility only by the spirit of true humanity in which it is employed. With the intellectual and the scientific education, the education of the feelings and the manners must run parallel. You know that it is not the duty of the clinic to teach the latter, but, as your future instructor, I hold it my duty at the commencement of our common labors to at least point out this question, which I look upon as one of the weightiest importance for all professional treatment."

LIVER FUNCTION TESTS*

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No other single organ in the human body possesses such a variety of functions as the liver. Until recently little had been done to determine the excretory and other functions of the liver.

Its blood supply brings it into intimate relationship with the gastro-intestinal canal and the spleen. It removes toxic substances from the systemic and portal circulation. Alkaloid and mineral poisons are disposed of to a certain extent by the liver as seen in phenol.

The liver plays an important part in nitrogenous metabolism. It is the storehouse of glycogen and secretes bile to aid in the digestion and absorption of fats.

Such a dissociation of function would show different results, require numerous tests, and the results depend on the hepatic tissue involved. We can readily see that various hepatic tests combined can only give us the desired information. Such a dissociation of function is seen in the stomach and only after a test meal, x-ray, motor meal, etc., are we able to arrive at a tentative diagnosis.

The regenerating power of the liver cells following injury is well known, and the results found during an attack of acute catarrhal jaundice will often be transient.

Since the liver plays such a large part in carbohydrate metabolism, methods were devised to determine its glycogenic function. We know that the di-saccharid cane sugar is split into the monosaccharides glucose and levulose, the levulose converted into glucose and stored in the liver as glycogen. Cane sugar will occasionally show a glycosuria in hepatic disease, but an equal amount of glucose will not. This test was shown beautifully in one of our cardiac decompensation cases with an enlarged liver. Levulose alone is sometimes used but it is rather expensive and the test gives us little information since there are so many other organs concerned in carbohydrate metabolism. Levulosuria and galactosuria are usually positive in acute catarrhal jaundice and hepatic cirrhosis.

Widal's test, sometimes called hemoclastic crisis, is based on the assumption that in hepatic disease the ingestion of the large amount of protein will cause a leucopenia. This test was not satisfactory in our cases. The test consists in the ingestion of 200 cc of milk in a fasting stomach. In two cases of liver disease there was an increase. This increase might have been an error in technique but at any rate the change is usually not more than 500 cells and one who does many white counts could readily appreciate an error of 500 to 1000 cells. In fact, one is to be congratulated on checking within 500 white cells for our present methods of counting leucocytes are far from perfect.

Perhaps this is inappropriate in this paper but one of our cases following an injury in the upper right quadrant showed a leucocytosis of 40,000. Part of the liver had been torn with subsequent hemorrhage. However, a leucocytosis is one of the most constant findings following internal hemorrhage anywhere and will often make a diagnosis of internal bleeding.

It is not the aim of this paper to discuss all the hepatic function tests for many of them are purely academic and impractical. The determination of fibrinogen which is lowered in hepatic disease, is difficult, as are some of the amino acids which are increased in hepatic disease.

Van den Bergh's determination of the bilirubin content of the blood has become an important one in determining liver disease. He showed that normally this is ½ mg per 100 cc of blood serum. If the amount of bilirubin increases up to 2 mg per 100 cc of serum, bilirubin will also be found in the urine, and the sclera and the skin will show a yellowish discoloration. He believes that whenever functional changes in the liver in clinical cases in jaundice can be detected by functional tests there is an impaired secretion of bile. In 20 cases of liver disease there was an increase of serum bilirubin ranging from 4 mg to 25 mg in 100 cc of blood serum. Not all of these cases were jaundiced and in several we were able to make an early diagnosis by the Van den Bergh test. These are the findings generally accepted and the Van den Bergh test is another weapon added to our diagnostic armamentarium. The test is quite simple and does not require much time or apparatus.

One of the qualitative and valuable tests for liver function is the presence or absence of urobilinogen and urobilin in the urine. Normally urobilinogen is destroyed by the liver on its return from the intestinal canal. In liver disease it is not destroyed and passes into the general circulation and appears in the urine. If present, a few drops of dimethylaminobevizaldehyde to a small amount of urine in a test tube will give a bright red color; if there is no urobilinogen present the urine will remain colorless. Urobilin, a derivative of urobilinogen, is readily found by adding a few drops of 10% zinc chloride to a small amount of urine, dissolving the precipitate, zinc oxide with ammonia, filtering and on holding up to the light, if urobilin is present, there will be a green fluoresence.

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*Read before Nebraska State Medical Association, annual meeting, Omaha, May 11-13, 1926.

A-1. Various dyes have been injected into the blood and subcutaneously and the stools tested for the amount secreted. This method was very cumbersome and indefinite and has now been discarded.

A-2. The advent of the duodenal tube and the Lyons-Meltzer gall-bladder drainage led various men to inject various dyes into the circulation and recover them from the duodenal drainage. It was thought that a test similar to the kidney functional dye test could be obtained. Phenoltetrachlorphthalein is now commonly used. Our quantitative tests have been rather disappointing for there is always the possibility of much dye passing out of the duodenum into the lower bowel and not returning through the duodenal tube. The time of excretion can usually be determined but it has not aided us much in our work on liver function. Some men regard a delay of 20 minutes in excretion of the dye by the liver as an indication of liver disease. Normally it appears in about 17 minutes. Sometimes it is delayed 45 minutes but in several normal cases we had a delay of more than 30 minutes.

Rosenthal has recently devised a quantitative method which promises much for the determination of liver function by the intravenous injection of ½ mg. of phenoltetrachlorphthalein per kilogram of weight. The normal blood is just collected and specimens of blood drawn in 15 minute intervals for 2 hours, centrifuging and alkalinizing the serum and comparing in a colorometer for the per cent of dye excreted as in our kidney functional tests. A standard can now be obtained which is stable. Normally most of the dye is excreted within 15 minutes. In biliary and hepatic infections it is usually delayed and any appreciable delay is regarded as pathonomonic of liver disease. This test has been most satisfactory in our series and we are now using it in all of our cases in which we suspect hepatic disease.

With the Van den Bergh test, qualitative bilirubin and urobilinogen and quantitative blood serum phenoltetrachlorphthalein tests, we now have at our disposal invaluable liver functional tests which at least should help us to make a diagnosis. Even now these tests are often neglected and much work should be done by different men to make the diagnosis, prognosis and treatment of liver disease more firm that it has ever been before.

DISCUSSION

MAURICE C. HOWARD, M. D., (Omaha): I was very much interested in this paper for the reason that so many cases of gall-bladder disease with their associated hepatitis are being operated a little sooner than they should. The fact that Dr. Deppen and his co-workers are attempting to determine the functional capacity of the liver will be a great aid in lowering the mortality of gall-bladder surgery. By this I mean that if it becomes possible to pre-operatively determine the condition of the liver by these dye tests, then can one foretell the true operative risk in attacking this or that gall-bladder.

It is my opinion that all liver function tests will have to depend upon the mobilization and utilization of glucose. When the time arrives that we shall be able to collect a series of dye tests, such as Dr. Deppen has mentioned, and these dye tests will run parallel with the amount of glucose the individual can take into his system and store in the liver for future use, then we will have a liver function test which is nearly specific. Until this time we must continue in the experimental field seeking that dye test which will show the true functional activity of the liver.

POWER

There is no limit to the power of any human being, but that which he sets for himself; for, he can who thinks he can.

Thought is the mighty tool with which man shapes his life and carves his fortunes, good or ill, out of the invisible.

Mind is the one great creative force in the universe out of which all are evolved. The universe itself is an expression of the mind of Omnipotence. A man's life is the expression of his mind, for, "As a man thinketh in his heart, so is he." You never can rise higher than your thought of yourself. You may succeed when other people have no faith in you; but you will never succeed without faith in yourself.

All failures and all unhappiness are the result of wrong-thinking. Reverse the thought and you will reverse the circumstances that cause those unfortunate conditions.

Inspiration has a message for all who are perplexed with life's problems; for those who have not mastered their own thought forces. It will show them how to get hold of the vast unused reservoir power within themselves, which will enable them to do the bigger things they long to do.

Inspiration will help you to find your real self, the larger, grander man or woman who has power to achieve your highest ambition; who will find your place in the sum of success and happiness, and make all your dreams come true. —Ex.

Special Article

PROGRESS OF SURGERY

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BONE LESIONS

During the last few years there has been some rather intensive work on the diagnosis, treatment, and prognosis of bone lesions. After five years of study Dr. Codman(1) gives a report on bone sarcoma as studied by the Registry of Bone Sarcoma. At the end of that time, seeing not only their own cases, but having data sent in by surgeons all over the country, only 17 cases of primary malignant bone tumors had been collected, which were considered cured (Ewing's tumor, 4 cases—osteogenic sarcoma, 13 cases). A classification was made, it proved impersonally Dr. Bloodgood's contention that giant cell tumor is benign, and may be cured by radiotherapy. Dr. Mallory's contention that benign giant cell tumor is not a neoplasm but a faulty repair phenomenon, was agreed with. They state that many of the cures from combined treatment by surgery, mixed toxins, and radium claimed by Dr. Coley are authentic.

Of the 17 cases of 5 year cures, all but one had amputation and that one had a local exploration followed by intensive radium treatment and mixed toxins. Nine of the other sixteen also had toxins. Eight also had radiation. In eight these treatments were combined. Seven had no other treatment than amputation.

Nearly all histories of osteogenic sarcoma cases conform to the following five points:

1. Onset. Unless pain precedes other symptoms we may suspect that the case is not one of osteogenetic sarcoma.

2. Duration. We rarely get a history of years. In benign osteogenic tumors the history is usually of years. If the patient sought advice in less than a month or over a year from the onset of symptoms we may suspect it is not osteogenic sarcoma.

3. The general condition. It does not arise in unhealthy bone except after 50 in cases of Paget's disease of the skeleton. If the patient were in poor health at the onset, the tumor is probably inflammatory — tuberculosis, syphilis, osteitis, etc.

4. Age. With exception of cases also having Paget's disease, 12 in number, there were no instances of osteogenic sarcoma in a patient over 50.

5. Rapidity of growth. Osteogenetic sarcomata as a rule show steady enlargement practically always noticeable month by month, but no definite enlargement day by day or week by week.

Examination: 1. Immobility of soft parts over the tumor. Soft tissues may be moved over bone in giant cell tumor or cyst. Inflammatory conditions may cause as much or more fixation of the soft parts than osteogenic sarcoma.

2. Location. One-half of all osteogenic sarcoma occur in the femur; one-quarter in the tibia; and one-eighth in the other long bones. Phalanges of fingers and toes, the carpal and most of the smaller tarsal bones appear to be exempt. Osteogenic sarcoma is rare in the shaft of a long bone but this is the customary situation for Ewing's tumor or for carcinoma metastasis and myeloma.

3. Inflammatory signs. These are absent or very mild.

4. Condition of neighboring joints. It rarely invades the joint until late.

5. Size and shape. It is usually of good size when first noticed and surrounds the bone or most of its circumference.

The X-ray: 1. There is usually combined central and periosteal involvement.

2. The old shaft is in its normal position even if it is in fragments.

3. Invasive character. The edge in spongy bone is practically never rounded and smooth as in giant cell tumors and in some vacular carcinoma metastases.

4. Osteolytic or osteoblastic or both.

5. Involvement of soft parts.

Microscopic Criteria: The microscopic picture shows mitosis and hyperchromatism, pleomorphism, presence of tumor giant cells but many show no tumor giant cells, differentiation shows degree of malignancy, and all osteogenic sarcoma probably show tumor vessels.

In forming the conclusions 650 registered cases were studied.

Bloodgood(2) in two articles on how to diagnose and treat a bone lesion, speaks of central and of peripheral lesions. He states the giant cell tumor is the commonest central tumor of the epiphysis in an adult. Bone cysts usually appear before the age of 18 and are as a rule in the shaft. A bone cyst is the most likely to undergo spontaneous ossification without symptoms. Bone cysts are probably not due to trauma. Forty per cent of the cases first know of it because of a fracture. In the remainder there is a history of swelling, pain, deformity, or loss of function. In giant cell tumor trauma may be a factor. This tumor may destroy the bone shell and infiltrate even beyond, but is always encapsulated and circumscribed. It does not metastasize. Other central lesions which are not due to trauma are chondroma and myxoma. A sarcoma usually involves the entire bone. Central sarcoma are usually myxochondrosarcomas. There is also a true periosteal sarcoma. There are no cases of cured central sarcoma. In children practically all central lesions of the shaft are bone cysts; in adults the majority are chondroma, myxoma, metastatic tumor, myeloma, and possibly chondromyxosarcoma. Bloodgood has never seen a giant-cell tumor in the shaft of an adult. The treatment suggested in central bone lesions of adults is to use radiation first, whether there is a fracture or not. If later roentgenograms show no ossification, further expansion, or destruction of the bone shell, operate. Explore with a cautery and if it proves to be not a bone cyst, resect and do a bone transplantation. For the treatment of giant-cell tumors Bloodgood favors curetting followed by thermal and chemical cauterization. He recognizes treatment by radiation but favors the operative treatment.

In lesions of the periosteum(3) sclerosing sarcoma may resemble non-suppurating sclerosing osteomyelitis. The former shows a change in the marrow shadow while that of the latter may be normal. In periosteal lesions Bloodgood is more radical and if any suspicion of sarcoma he advises operation. If there is suspicion that the lesion is syphilitic periostitis use intravenous therapy. If this does not give a definite improvement within ten days, operate. In the past ten years there has been no bone lesion with a negative Wassermann reaction, reported to Dr. Bloodgood, that was benefited by intravenous medication. In sarcoma biopsy using tissue from the periosteum, the nucroscopic picture is always that of the disease.

In discussing myeloma of bones Rowlands(4) states it does not metastasize but may be very destructive locally, if neglected. This type, he states, is usually amputated. He cites 5 cases he has cured by carefully shelling out the growth, curetting the cavity, then closing the wound completely so the cavity heals by blood clot.

Theories of the etiology of the solitary bone cyst are discussed by Phemister(5), who believes it is an infection. He reports two cases of bone cyst from which streptococcus viridans were isolated. The microscopic picture in bone cyst lining is that of an infection. He also suggests the possibility that bone cyst in childhood is from the same cause as benign giant cell tumor, which occurs almost entirely in adults.

STOMACH

The normal and pathologic physiology of the stomach and its relation to gastric and duodenal ulcer has been very extensively investigated by Klein(6). Several of his articles were reviewed in my last article on Progress of Surgery in the July, *Nebraska State Medical Journal*. He has published more since then, the entire series of articles being in the *Archives of Surgery*. In going over his work and that of other experimenters he forms a theory of the cause of ulcer production. All experiments justify the working hypothesis that acid is a necessary element in their production. For the production of an ulcer he thinks three factors are necessary, an unknown exciting cause which he calls X, the presence of hydrochloric acid in the stomach, and individual predisposition. Against these factors producing ulcer are arrayed the opposing forces of the organism. These are the defensive powers and the reparative powers. It is not always true that when the exciting cause of a lesion is overcome or ceases to act, healing will follow, because of permanent changes in the neighboring cells.

Arranged symbolically, ulcer results when: X + hydrochloric acid + individual predisposition overcomes defensive powers + reparative powers.

There are two methods of cure, the indirect and the direct. In the indirect method the ulcer itself is not attacked but our efforts must be (1) to strengthen the resisting forces or (2) to weaken or abolish one or more of the ulcer forces. Under the first heading little has been done but we may mention protein therapy and vaccines. Most methods fall into the second group. Both medical treatment and gastroenterostomy attempt to diminish or abolish the second of the factors, the hydrochloric acid.

The direct method is excision of the ulcer. The factors of defense, then, are not called on. In order to prevent the formation of a new ulcer we must then remove as nearly as possible the three ulcer forces. The only one which we can control is the acid. Finally after removing the ulcer and after abolishing hydrochloric acid, we must correct any functional disturbances that have resulted from the ulcer.

Levine(7) gives a very complete review of work done on the etiology and pathology of gastric ulcer. These ulcers begin as erosions, which in turn, are produced by mechanical, chemical, or physical causes, circulatory and nervous disturbances, infection, and allergic phenomena. Erosions are converted into peptic ulcers by the destructive action of the acid gastric juice.

To determine the situation and the direction of the anastomosis in posterior gastroenterostomy. MacLeod(8) made an anatomic study of the normal relation of the proximal portion of the jepunum to the posterior wall of the stomach. He found the jejunum to begin quite constantly in front of or to the left side of the third lumbar vertebra. In some cases of general visceroptosis it was placed as low as the lower border of the fourth, but it was always well above the level of the greater curvature. The position of the lowest part of the stomach is not constant but lies somewhere on the greater curvature, between two points, one of which lies one inch and a half from the pylorus and the other two inches to the left of the midline. No matter how atonic or hypertonic the stomach, this never varies. In the great majority of cases the lowest part of the stomach lies to the left of the mid-colic artery.

The subjacent proximal jejunum runs sharply downward usually across or just to the right of the most dependent part of the stomach, and in a lesser number of cases slightly obliquely to the left. In every case there is ample amount of jejunum posterior to the stomach for a no-loop anastomosis. He plans his anastomosis so as not to change the position of the jejunum or stomach. After opening the transverse mesocolon a clamp is applied to the point on the posterior wall of the stomach which lies in relation to the proximal end of the jejunum and another clamp near the greater curvature in relation to the jejunum. An equal length of subjacent jejunum is then anastomosed to the stomach in a line running between the two clamps.

Balfour(9) in his paper on the occurrence and management of gastro-jejunal ulcer emphasizes three points: (1) That the incidence of gastrojejunal ulcer following properly performed gastroenterostomy in well selected cases is 2 per cent; (2) that when such recurring ulceration has developed, secondary operation should be carried out without delay; and (3) that the operation of choice, provided the ulcer in the duodenum is completely healed and no obstruction has resulted, is the disconnection of the anastomosis, and if this is not advisable partial gastrectomy promises the best prospect of cure.

THE BILIARY SYSTEM

A tremendous amount of research is now being done on the gall-bladder, bringing to light many new facts, especially as to its physiology, which have to do with problems of diagnosis and treatment. The greatest amount of work comes from Graham and his co-workers in St. Louis.

Kopher and Kodama(10) working in Graham's laboratory in studying the question of a sphincter such as described by Oddi, have found that it cannot always be found apart from the fibers of the muscle coat of the intestine. They considered that normal tonus of the duodenal wall might be an important factor in the resistance to the flow of bile into the duodenum because they observed discharges of bile from the duodenal papilla coincidently with duodenal peristaltic movements. Duodenal peristalsis has a milking action and acts by aspiration of the bile ducts due to reduction of duodenal pressure following a peristaltic wave. They noted comparatively little change of pressure in the common duct after the introduction into the duodenum of magnesium sulphate even in concentration of 25 to 50%. Pituitrin was found to give an initial relaxation of the walls of the duodenum and a marked fall in the common duct pressure with dicharge of its contents. Pituitrin, however, quickly increases an activity of the intestine. Oleic acid is the best known substance to cause bile emptying.

How does the gall-bladder empty? Copher and Kodama consider it not a muscular contraction but merely a passive act. The gall-bladder is a distensible viscus which responds to increased pressures in the common duct by becoming distended. When bile empties into the duodenum the ductal pressure is suddenly lowered. This lowering of ductal pressure, with pressure of adjacent organs on the elastic walled gall-bladder, and possibly some siphonage action of bile streaming down the common duct past the orifice of the cystic duct, cause bile to flow out of the gall-bladder. The gall-bladder is never completely empty. In dogs a small rubber bag was substituted for the gall-bladder and studied following infections of tetroiodophenolphthalein. It behaves like a gall-bladder, except, of course, there is no ability to concentrate bile by absorption of water. A longer time was required for emptying the bag due probably to the fact that its elasticity was probably different from that of the gall-bladder. In another experiment the artificial gall-bladder was encased in a celloidin protector to prevent the influence of intra-abdominal pressure. It took even longer to empty the dye. These authors think the chief function of the gall-bladder is to maintain tonus and to prevent overdistention. This work leaves little rational basis for the conception of Meltzer of a reciprocal innervation between the so-called sphincter of Oddi and the gall-bladder.

McMaster and Elman(11), on the contrary, find that after feeding a dog, forceful contractions of the gall-bladder occur that are of sufficient strength to expel part of the contents of the viscus against a considerable pressure resistance. The normal pressure in the gall-bladder of a dog is 100 mm. of bile. This may be increased to 200 to 300 mm. after eating.

Mentzer(12), in a study of the valves of Heister, concludes that they offer practically no obstruction to the outflow of bile.

Against the rather generally accepted work of Deaver and Sweet that infection may extend from the gall-bladder to the pancreas by way of the lymphatics, Kodama(13), finds that lymphatics pass anterior to the pancreas but do not actually enter it. He has shown, however, that if the gall-bladder becomes adherent to the pancreas, a direct lymphatic anastomosis forms between the two organs. He also found a rather close communication of the lymphatics of the gall-bladder, liver, first portion of the duodenum, and ascending colon. This may explain the frequent association of infection of these organs.

GOITER

Graham and Cutler(14) disagree with the generally accepted idea that exophthalmic goiter and toxic adenoma are two different diseases, and that treatment of adenoma by the administration of iodine is contraindicated. Their cases of toxic adenoma were not only not aggravated by the administration of iodine, but responded in the same manner and in about the same ratio as did the cases of exophthalmic goiter. The quantity of iodine required and the number of days necessary to effect comparable reduction in the basal metabolic rate is far greater in cases of exophthalmic goiter than in cases of toxic adenoma. They recommend the administration of iodine as a measure preliminary to operation in all cases of toxic goiter whether the thyroid be adenomatous or non-adenomatous.

UROLOGY

As a result of experiments on dogs and goats, Williamson(15) makes the following conclusions in regard to kidney transplantation. An autogenous kidney transplant will maintain the life of the experimental animal for months after the removal of the other normal kidney. During the time this transplant is functioning, the urinary constituents are essentially normal and the animal behaves and lives normally.

Failure in this type of experiment is due to hydronephrosis and infection. Homogenous kidney transplants function as do the autogenous ones, but only for a period of days except in rare instances. The blood urea of an animal with three functioning kidneys, two normal and one transplanted, is markedly reduced. The failure of the homogenous kidney transplants seems attributable to a biologic incompatability between the donor and recipient. The value of kidney transplantation as a clinical measure is questionable with our present knowledge, although under proper conditions it might be worthy of serious consideration.

FIBROADENOMA OF THE BREAST

A histologic study with many fine plates of fibroadenoma of the breast appears by Sir G. Lenthal Cheatle(16). He states that fibroadenomas do not rise from so-called "rests" but thinks they originate in parts of the gland that have been normal. Diffuse hyperplasia and the formation of intracanalicular fibro-adenomas occur in the intra-elastica tissue. Diffuse adenomatosis and fibroadenomas arise from the pericanalicular and peracinous (extra-elastica) connective tissue. The correct treatment of fibro-adenoma is to excise the affected segment of the breast that contains the tumor or tumors.

ALKALOSIS

Bothe(17) discusses alkalosis as a complication in surgical conditions and reports six cases. Preoperatively, it may occur in pyloric or duodenal obstructioon and in peptic ulcer under an alkaline therapeutic regime. If this condition is recognized, and immediate operation is not necessary, the medical treatment of alkalosis undoubtedly decreases the operative risk. Alkalosis is especially prone to occur on alkaline therapy of cases with renal damage. It occurs in intestinal obstruction in which there is also a great fall in blood chlorides.

In alkalosis vomiting is quite persistent and gastric lavage gives only temporary relief. This differentiates it from vomiting due to dilatation of the stomach. Abdominal distention is usually, but not always, absent in alkalosis. As a result of the persistent vomiting and great fluid loss the patient becomes greatly dehydrated, the cheeks are flushed, the blood pressure falls, and the hemoglobin is quite high. Nervous irritability is increased, there often being muscular twitchings and numbness and tingling of the extremities. Renal function is diminshed and uremia may develop. There is a decrease in blood chlorides, a rise in blood nitrogen, and a normal or elevated CO_2 combining power.

As to treatment — give repeated gastric lavage and administer normal saline and 10% glucose. Possibly small doses of hydrochloric acid and ammonium chloride by mouth are of benefit. If it progresses in post-operative cases jejunostomy is indicated. If tetany develops calcium is indicated intravenously in 5 cc. doses of a 10% solution. Alkalies are contraindicated.

EMBOLECTOMY

Lahey(18) reports four cases of embolectomy for emboli lodged in the peripheral vessels. He states that the diagnosis of the lodgement of an embolus in an extremity has not been difficult. There is sudden pain with blanching of the extremity, loss of pulsation in the vessel distal to the embolus, and a definitely demonstrable point at which pulsation of the artery ceases. These patients suffer from diseases prone to produce emboli, such as cardiac failure, valvular disease, etc.

The most common locations at which emboli lodge are at the division of a vessel, as at the bifurcation of the arota, at the profunda branch, in the popliteal, and in the axillary where the subscapular is given off. The danger of secondary thrombus formation increases with time after the embolus has occurred. In no case is embolectomy successful if delayed twenty-four hours after the occurrence of the embolus. The technique of the operation is given.

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CASE OF BRONCHIECTASIS WITH LIPIODOL INJECTION*

GEORGE P. PRATT, M. D.,
Omaha, Nebr.

The patient, age 54, whom I wish to present, came to my service at the Immanuel Hospital, 16 days ago. She was suffering with an asthmatic like dyspnoea; cough with an abundant purulent sputum; temperature 100 4/10 degrees; rapid pulse and extreme weakness. The history is interesting.

She enjoyed good health until age 28 when she began to have stomach trouble which would bother her rather seriously at intervals. In 1917 at age 45, she was operated on by Dr. B. B. Davis, for gastric ulcer. He made a gastroenterostomy with excellent results. In 1918 she had pneumonia. In the spring and again in the fall of 1919 she had other attacks which she states the doctors called pneumonia. At these times there was an abundant purulent sputum which at times was bloody. On several occasions there was small hemorrhages. She coughed continuously during 1920 and in 1921 was thought to have pulmonary tuberculosis. Repeated examinations of her sputum, however, failed to reveal any tubercle bacilli. In 1922 she was sent to a sanitarium in Denver. Here a diagnosis of bronchial asthma was made and is was suggest that she go to California. The year of 1923 was spent there with no appreciable benefit. She has now moved to Nebraska and her doctor has referred her for therapeutic suggestions.

The history of repeated lung infections over a period of 7 years would suggest one of the conditions which we group together under the head of chronic lung suppuration; namely, lung abscess, bronchiectasis, chronic pneumonitis, ruptured chronic empyema, tuberculosis, actinomycosis, malignancy and also certain extra pleural conditions as subphrenic abscess, perinephritic abscess or an abscess with Potts' disease.

The cough, which is loose, comes without effort and varies with position, is very productive. The sputum is fairly large in amount varying from 4 to 6 ounces. It is whitish yellow to greenish in color, resembling pure pus, and has a peculiar sweetish odor. So offensive at times that the patient must vomit. It has been repeatedly examined for the tubercle bacillus and actinomycosis or blastomycosis with negative results. The fingers as you can see are clubbed.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

There is a slight fever at times. The general health seems good considering the 7 year duration of the illness, which added to the above symptoms suggests very strongly bronchiectasis.

FIG. 1.

On physical examination of the chest the heart's action is rapid but otherwise it is quite normal. The lung findings are those of bronchitis plus the findings of small cavitations. They vary depending on whether the bronchi are filled with pus or have been emptied after a severe coughing spell. I have examined her when both bases revealed many rales and again when there was few. I have examined her and found dullness and again a fairly resonant note depending upon the amount of secretion in the bronchial tree. The apices have always been negative.

The ordinary x-ray films, as you see, show dilated bronchi and areas of greater density. It is often advisable to make exposures when the bronchi are full and again when they are emptied, as the difference in the findings are quite diagnostic.

A newer method, the injection of lipiodol into the bronchi giving a contrast shadow similar to barium in the gastrointestinal tract has helped to more accurately localize these lesions. I have asked Dr. Herbert Davis who has injected this case to show you his technique and the x-rays.

Time will not permit a discussion of the prognosis and treatment but before I stop I should like to make a plea for earlier diagnosis. If we are to help thsee cases we must recognize them before this stage. The lipiodol will help materially but there are certain clinical rules which are very important, namely: (1) Any chronic cough with purulent sputum which persists after pneumonia, bronchitis, influenza or operations on the throat should suggest one of thsee chronic lung conditions; (2) A chronic cough with abundant sputum negative for tubercle bacilli with the physical findings in the lower lobes likewise indicates chronic lung suppuration. Hemorrhages may be present; (3) The good general health persisting in spite of a prolonged history of cough and abundant sputum, which in this case is over 7 years, is characteristic of bronchiectasis. The fairly good health usually continues until the case is complicated by a terminal bronchopneumonia, brain abscess or the effects of amyloid degeneration. Dr. Davis.

HERBERT H. DAVIS, M. D., (Omaha): In the few minutes' time I have to show this, I cannot go into detail. Lipiodol was brought out five years ago by a pharmacist in France. It contains 0.54 grams of iodine per cubic centimeter in oil of poppy-seed. It is a French preparation, imported. It enables us to get pictures of the bronchial tree much as the urologist gets pictures of the kidney, pelvis and ureter. It was used originally in neurology to locate spinal cord tumors by injecting into the spinal canal. The trouble with that is that they have found it is not absorbed, as was formerly thought, and some cases report over a year later with the lipiodol still in there and causing symptoms. In the bronchial tree, as soon as the anesthesia passes off, the patient coughs and gets rid of all of it.

As to the manner of injection, it can be injected through the crico-thyroid membrane, which is the method most commonly employed. I used a curved cannula, after injecting it with a little anesthesia. This cannula fits the syringe firmly. This is essential, because inserting the cannula causes a spasm of coughing.

You should use intratracheally from five to fifteen centimeters of 3 per cent novocain, warmed to the body temperature. In five or ten minutes, the cough reflex will be diminished so that you can inject the oil. An ordinary adult will take twenty centimeters of iodinized oil. With a case of bronchiectasis, more should be used.

Another type of cannula for injecting into the glottis has been tried. I wanted to try the different methods out, and Dr. Cassidy tried this on a girl. It was difficult to anaesthetize and get rid of the cough reflex. He tried with the bronchoscope and had difficulty. The injection through the cricothyroid membrane with a curved cannula seems best. I have injected three cases with lipiodol, and the fourth is a case done by Dr. Allen.

The first plate shows the bronchial tree of Dr. Pratt's case. Case II is in Dr. Potts' service at the University Hospital — a boy of two and one-half years. On January 30 he had a severe coughing spell which lasted three hours. Twelve hours later he developed fever and was diagnosed pneumonia. Since then he has had quite a few spells of coughing, and came on Dr. Potts' service on March 26. With the bronchoscope he removed several portions of peanut from the lower left bronchus. A week or two later he wanted to see if there were portions left. This youngster had five centimeters of lipiodol injected, and it shows dilated bronchi in the lower left portion. He is in good condition and has gone home.

Case III, is a girl of fourteen, who seven years ago had influenza and pneumonia. After three weeks, she began a great deal of coughing. She would cough up a cupful of foul-smelling sputum at a time. She is in fairly good health. In this case it shows seven or eight large cavities in one lobe of the lung. This makes a good case for surgery. Removing this entire lobe I think should cure her.

This oil is specially indicated in these cases. It often gives the indication as to when the treatment should be medical or surgical. If diffuse involvement it is medical. If rather severe involvement confined to one lobe of a lung, surgery will often give complete cure.

Case IV, this is the case of a boy nineteen years of age, with severe bronchiectasis. Dr. Allen collapsed the lung by artificial pneumothorax two or three times. We cannot do so on a case where there are adhesions formed. The lipiodol injection reveals with the roentgen ray diffuse involvement of the lower lobe. As pleural adhesions are now present preventing artificial pneumothorax, and the boy's general health is becoming impaired, I cansider him a case for surgery.

Delayed tonsillar hemorrhage is undoubtedly due to an infection which causes a sloughing of the vessel before the intima has become fully sealed. The vessel then opens again and further hemorrhage takes place, which may cease spontaneously or may be of a very alarming nature requiring the most skillful attention to control. If the clotting power of the blood is high, means should be taken to improve same before undertaking the operation. This may be accomplished in most cases by the administration to calcium salts. Some surgeons go so far as to ignore entirely the clotting time of the blood and operate regardless. If the cases reported had had a faulty clotting time, doubtless my difficulties in several of them would have been greatly increased.—Dr. J. Warren White (*Va. Med. Monthly*).

It's the person who needs the doctor's attention and not the disease or the "case". That more and more doctors are treating diseases and complaints less as abstract troubles and paying increasing attention to the needs of the individual — the personality — as a whole and applying remedies and advice based upon broader understanding of life and its normal and malfunctions as they bear upon the individual as a whole is a fact destined to add a new chapter to medical progress.—*Calif. and West. Med.*

CARCINOMA OF THE THYROID

A. F. TYLER, M. D.,
Omaha, Nebr.

We have the opportunity this morning of bringing to your attention four cases of carcinoma of the thyroid. Three of these were true thyroids, and one was a lingual thyroid. Two cases metastasized through the blood stream into the lung. One case metastasized directly, extending into the lung by direct extension and involving the lung and one of the ribs. The third case metastasized into the larynx and into the esophagus, as shown in Figs. 11 and 12, with paralysis of the recurrent laryngeal nerve, and partial inhibition of the vagus and death from vagus paralysis.

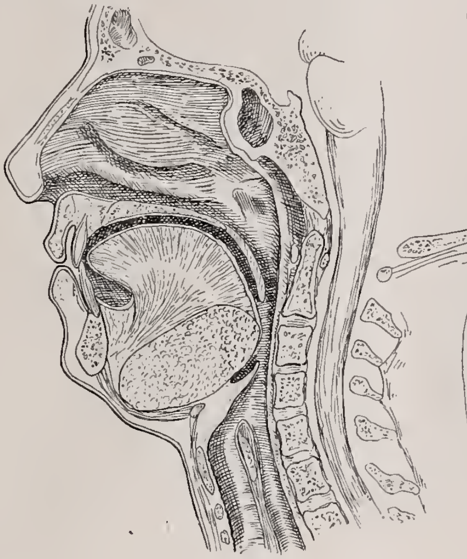

Fig. 1. A drawing of the side view, showing the location of the tumor in the tongue. At the time he came to us, it pushed down and made a swelling in the neck which could be felt just above the hyoid bone.

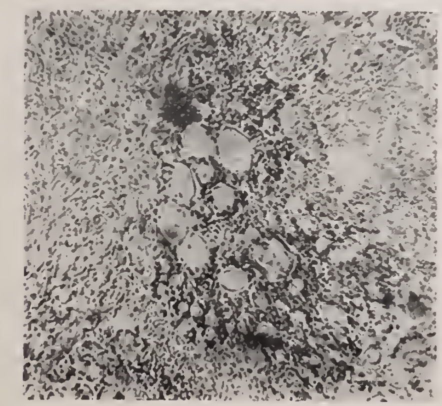

Fig. 3. A photo-micrograph of tissue from the tongue showing colloid areas, and proving it to be definitely thyroid.

All four of these cases were above fifty years of age — one in the sixth decade, two in the seventh, and one in the eighth decade. All cases had a history of three to nine months of symptoms preceded by the presence of the adenoma

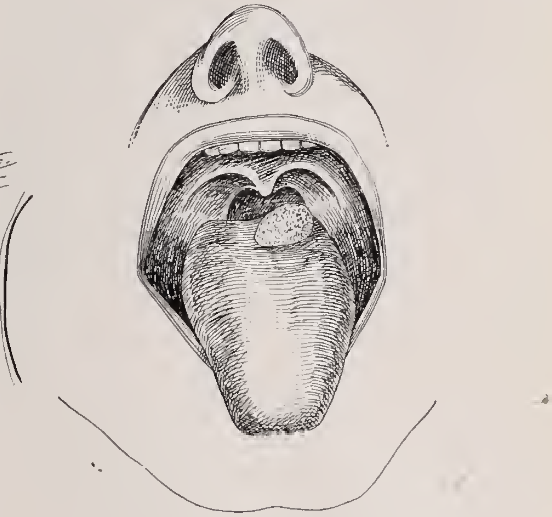

Fig. 2. A drawing of the malignant thyroid in the tongue. It was located in the posterior left quadrant and can be seen bulging up on the surface of the tongue.

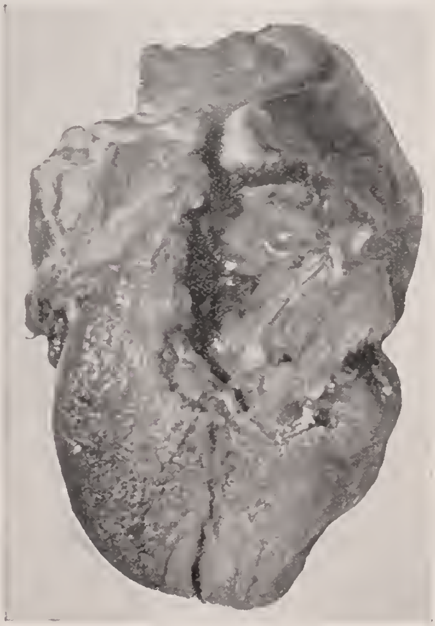

Fig. 4. A photograph of the tongue itself, postmortem, showing the area of destruction corresponding to the locations shown in the previous drawings.

of the thyroid for many years. The one shown in Figs. 10, 11 and 12 had a history of sixty years' duration.

All cases sought medical advice because of the recent enlargement of the goiter, accompanied by dysphagia or dyspnea, or both. One patient had pain referred along the posterior auricular nerve and down the ulnar nerve into the hand. This was the case which metastasized by direct extension into the lung, the pain being due to pressure on the brachial plexus.

All cases had been pronounced inoperable by competent surgeons before radiation therapy was attempted. The institution of radiation therapy in these cases enabled one patient to live three and one-half years; another, twenty-one months; the third, one year; and the fourth, two months after we first saw them.

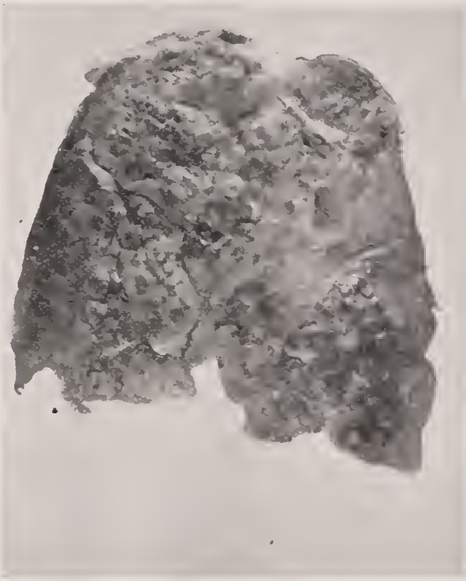

Fig. 5. This is a photograph of the gross specimen of the lung showing the nodules appearing on the surface of the lung underneath the pleura and bulging up through it.

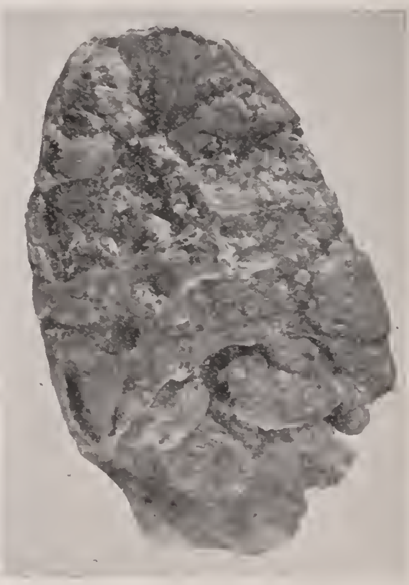

Fig. 6. This is a photograph of the gross specimen showing a sagittal section through the lung and the different areas of infiltration, large and small, scattered throughout the entire lung.

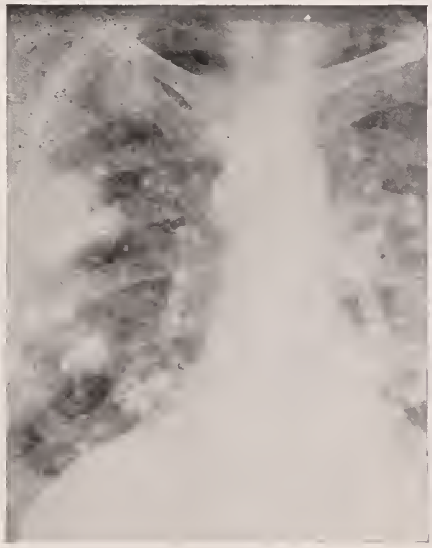

Fig. 7. The growth metastasized through the blood stream directly into the lungs, as you see by multiple areas of increased density, definitely circumscribed, scattered throughout both lungs, the roentgenogram being characteristic of metastasis through the blood stream.

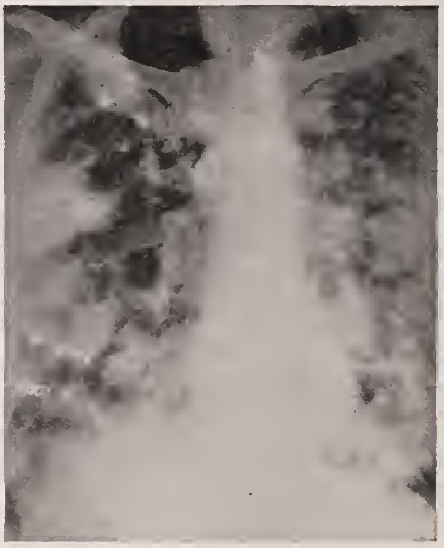

Fig. 8. This is the second case which metastasized through the blood stream into the lungs. This patient was an elderly woman sixty-seven years of age, with a history of thyroid enlargement for fifty years, and a recent enlargement covering about six months' time.

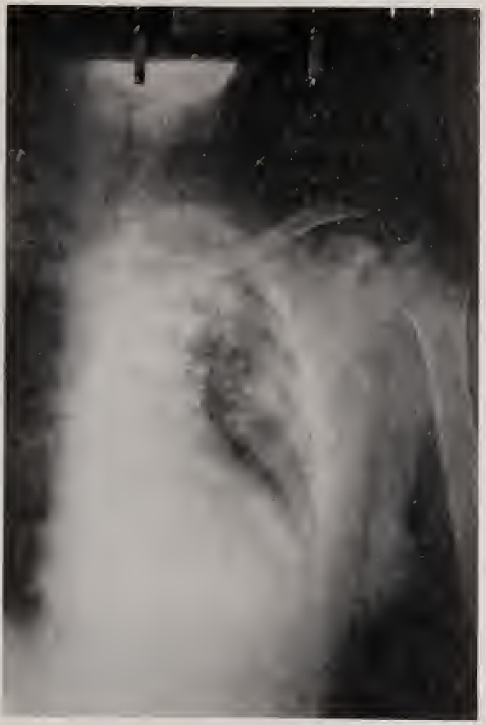

Fig. 9. This is the patient who had the extension of the growth in the thyroid directly into the lung. You can see infiltration of the left apex where it had extended into the lung, and into the first rib.

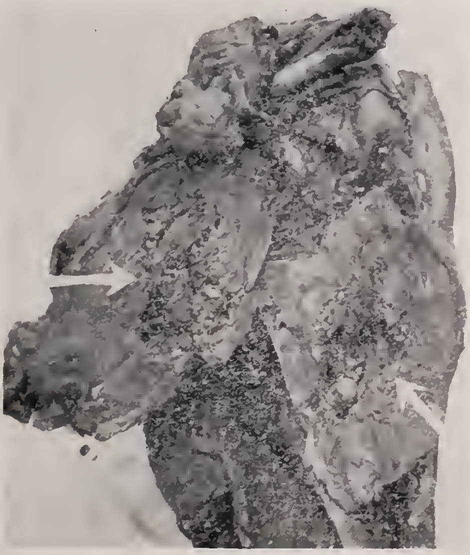

Fig. 10. This is a photograph of cross section of the gross specimen of the thyroid showing the carcinomatous degeneration in the lobe.

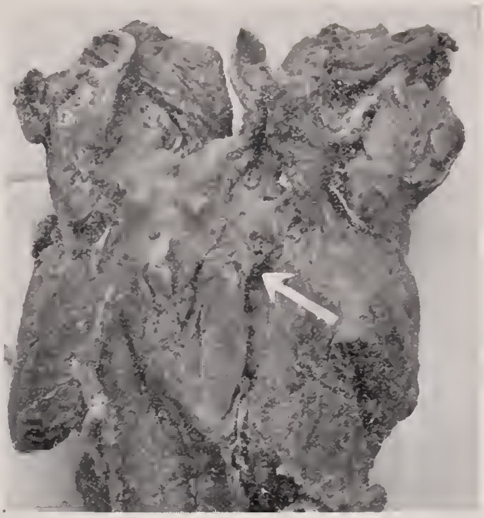

Fig. 11. This is a photograph showing the extension of the carcinoma through into the larynx. The growth has eroded through the laryngeal wall almost occluding the lumen of the larynx.

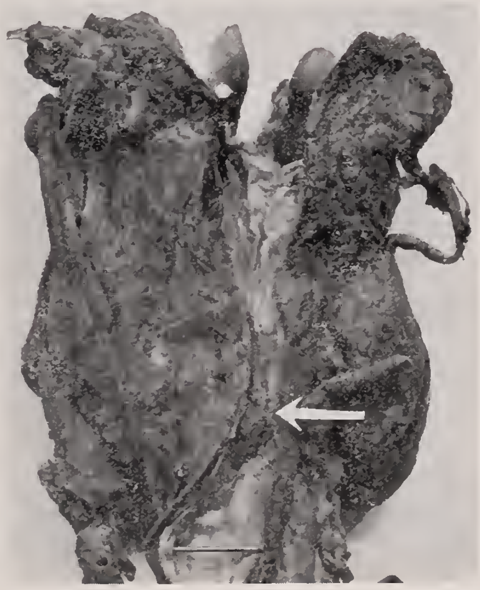

Fig. 12. This is the same patient, showing the extension into the esophagus. Notice how narrow the lumen is where the growth involves the wall. Above and below this area one can see the normal width of the lumen. It was impossible to pass a tube to feed the patient when she reached the point where it was impossible for her to swallow.

SIMPLE GOITER AND ITS PREVENTION

According to David Marine, New York (*Jour. A. M. A., Oct.* 30, 1926), the factors which cause simple goiter center about the supply of iodine and the needs, normal and abnormal, of the thyroid gland for iodine. Supplying this element in amounts that can be considered as roughly approximating the physiologic needs of the body has resulted in completely controlling the disease both in man and in animals.

CONTRACTURES OF THE KNEES, WITH DEMONSTRATION OF APPLIANCES*

J. P. LORD, M. D.,
Omaha, Nebr.

Orthopedic surgeons get the left-overs, to a great extent, and contractures of the knees are some of the left-overs we get. We have had cases that have had partial or complete ankylosis, and the question is how to get them straight.

Recently, I had cases of contractures that have been so extreme, the heels rested against the buttocks. The ordinary contracture is usually less than 90 degrees. They are ordinarily the result of some form of arthritis, possibly having had its origin in some form of injury. Many of these cases have been carried through the acute course of their illness and have practically gotten well. Perhaps precaution had not been taken to forestall contracture. The question arises, what to do about it, when there are severe ones. Down through the ages all kinds of devises have been suggested. I decided I would prepare something myself to suit my needs in certain cases which had been crippled for years—right angled deformities—which had been having their time wasted by physiotherapy, springs, and non-professional rubbers.

This is our latest creation, in an appliance.

Ordinarily these cases have a large amount of pathological dislocation due to the contractures of the strong hamstring muscles.

So we created this devise. With rest, immobilization, and reduction of irritation which takes place, the patient may turn this, perhaps one-fourth inch per day. In the course of a few weeks the trick has been accomplished. He has been in his home for the most part and has accomplished the greater part of the reduction.

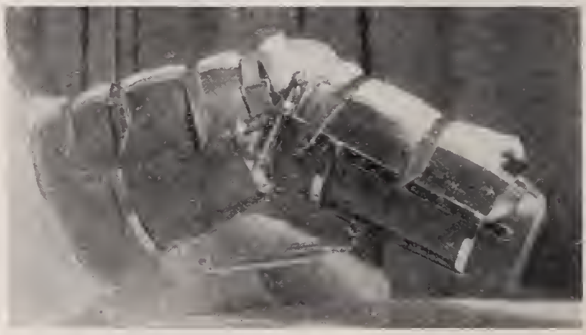

Fig 1. Lord Knee Brace, used for contractures of the knee.

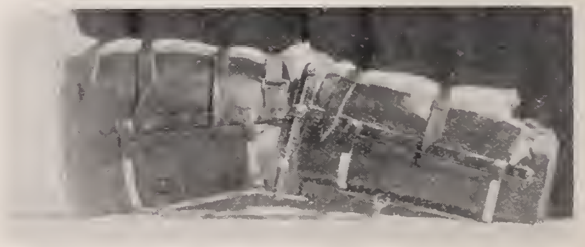

Fig. 2 Same as Fig. 1, showing correction obtained by use of screw device 1 and 2.

It is our observation that the general surgeon and the general practitioner have an inadequate idea of the value of fixation in arthritis. They understand traction, but do not employ enough. They use five pounds when twenty pounds is needed. This appliance puts the parts at rest, and the straightening is gradually accomplished.

TWO CASES OF EXTREME DEGREES OF STRABISMUS SHOWING RESULTS OF OPERATIONS*

J. M. BANISTER, M. D., F. A. C. S.,
Omaha, Nebr.

The treatment of manifest and deforming ocular deviations pertains strictly to the practice of the oculist. Most of these cases, however, are seen by the general practitioner before being presented to the ophthalmologist, as the family physician's advice will be sought in advance, in the majority of cases, as to what should be done — whether an operation is advisable or not.

Bearing in mind the question of advisability as regards operation, two cases of strabismus of extreme and different types will now be presented, showing the results that may be expected from surgical interference.

Case 1. The first patient is a little child under four years of age. This case has manifested an extreme degree of "cross eyes" since infancy. The strabismus was of the alternating type, one eye turning in while the other fixed, and then suddenly the squinting eye taking up fixation and the other turning in. In these intervals of change of direction of the visual axes, the child would lose her relationship to her surroundings and would fall over chairs or other obstacles in her way, or bump her head against doors or furniture. Her head was so constantly bruised that the neighbors reported the mother for beating the child. This court ordered the mother to have the child attended to.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

There is a prejudice among oculists against operating for strabismus on a child of such tender years, which prejudice in this instance was considered untenable.

The presenter of this case holds that the operation of tenotomy carefully, and guardedly, performed on the overacting muscle is just as satisfactory in a child as young as this patient as in an older individual, provided that the possibility of an over effect be obviated by a "controlled tenotomy," an operation practiced by him for many years. This consists in a careful division of the tendon close to the sclera with the use of a buried mattress suture of 00 chromicized catgut embracing the belly of the muscle and the remnant of the insertion, and so tied as to hold the severed end of the muscle just at the proper point to scure the effect desired. This end of the muscle becomes firmly united to the sclera at this point and there is no after increase in effect.

In the present case it was realized that the strabismus was of such an extreme degree that an operation, as mentioned, must be used on both eyes to get the effect desired. This method was carried out, the second operation being performed three weeks after the first. The result has been perfect. The deformity has been relieved, the eyes move together and the child can run around and play as she should without running into obstacles. (Chairs were then put in the way and the child was made to walk through them to show how carefully she would avoid the obstacles in the way.)

The child must habitually wear the glasses prescribed for her refractive condition, which she uses without trouble. Wonderful improvement has resulted from the operations in this child's mentality and morale, her physician reports.

Case 2. This case is one in which there has been a very high degree of comitant external strabismus since early childhood.

It was necessary in this man's case to operate upon both eyes owing to the high degree of the deviation.

The deviating eye was first subjected to operation, and then the second was treated in a similar manner.

The operation in each case was as follows:

A controlled tenotomy (as described under Case 1) was performed on the external rectus muscle of the deviating eye, and a tuck shortening operation, with buried catgut suture at once applied to the internus, as much of the muscle being taken up as was anatomically possible. At the time of the operation on the other eye a similar procedure was employed, the eyes being brought into proper relative positions at the table.

The presenter of this case has been practicing and advocating this method of operating ever since 1898, after the method of the late Dr. Francis Valk of New York with several important modifications. That the method is effective can be proved by observing the proper movement of this patient's eyes as a fixation object is now carried before him in all directions. The last operation was performed in February, 1925. The present condition after so many months, shows the durability of the effect. As it is now, so it will remain permanently.

This method of operating has been followed by few ophthalmologists, but that it is of extreme value and efficacy in these distressing instances is proved by the results obtained by the presenter of these cases through a practical experience of twenty-eight years of its use.

OSTEITIS FIBROSA CYSTICA (FEMUR)
CONGENITAL ANOMALY OF PATELLA
SKELETAL TRACTION IN FRACTURE OF FEMUR
FRACTURES OF FOOT*

JAMES W. MARTIN, M. D.,
Omaha, Nebr.

Case I. Girl nine years old.

Chief Complaint: Painful limp. Pain located in region of right hip joint.

History: Limp first noted at age of five. Not much attention paid to it until approximately two years later when pain developed.

Physical Examination: Tenderness in right digital fossa with brawny thickening in region of the greater trochanter; femoral head in acetabulum, but trochanter displaced slightly upward; shortening for femur of five-eights of an inch.

Roentgenogram: Reveals absorption of bone with cystic formation, the typical picture of osteitis fibrosa cystica or bone cyst. Two types of this disease, first solitary cyst, secondly, the generalized type.

Pathology: Essentially the same in both types, namely, development of fibrous tissue in the marrow cavity which enroaches upon and eventually replaces the normal trabeculae of the bone, and in this fibrous tissue small cysts appear. First notice of this disease in literature in 1891 when von Recklinghausen reported three cases of the generalized type.

Differential Diagnosis: Tuberculosis, syphilis, low grade pyogenic osteomyelitis, neoplasm. In generalized form we also consider Paget's disease (hyperostoticporotic senile form of deforming osteitis fibrosa); and also osteomalacia.

Treatment: Particularly in weight bearing bone where bending is apt to occur, open operation, curettage, and breaking in of the cyst walls is indicated. Operation refused here, hence use of walking caliper hip brace, and crutches, until operation is agreed upon.

Case II. A congenital anomaly of patella which might be quite easily mistaken for a fracture. This anomaly was first reported by Joachimstal in 1902; most recent report by Adams and Leonard of Boston in Surgery, Gynecology, and Obstetrics, November, 1925. The importance of recognizing this anomaly is evident both as regards treatment and in connection with the Compensation Law. Center of ossification for patella appears at 4½ or 5 years and ossification is not complete until 16 or 18 years of age.

The patella is a sesamoid bone and subject to anomalies in its development just as other sesamoids in the body. The upper outer quadrant of the patella practically always the site of the variation and the anomaly is also bilateral. The outlines of the bone are those of cortical bone and not of cancellous bone.

Case III. My third is a problem in orthopedics in which skeletal traction afforded the solution. The patient is a man of thirty-five years who sustained a fracture of the shaft of the femur. On the day of the injury open reduction was performed and a Lane plate and some silver wire applied. The reduction was satisfactory, and Providence being kind, no infection occurred. However, external fixation was inadequate, weight bearing was begun a bit too early, and the plate pulled out of the lower fragment, and marked angulation developed. This slide shows the condition three months after the injury. Two weeks after this roentgenogram was made, I removed the plate and wire and found that even more angulation deformity had occurred since the time of the roentgenogram made two weeks previously. The shortening before operation was 1½ inches. The fragments were freed, the periosteal tube very carefully preserved, and ice-tongs inserted into the lower fragment. A Thomas splint was applied and traction obtained by a windlass from the tongs to the splint, while the knee was flexed and the leg suspended in the usual hinged attachment to the straight Thomas, thus permitting motion at the knee, a matter of considerable importance since the patient already presented considerable restriction in motion at the knee due to fixation. The post-operative course was uneventful. I do not hesitate to leave these tongs in place until the roentgenogram shows sufficient callus to maintain the reduction. The shortening has here been entirely corrected, the alignment and the degree of apposition are thoroughly satisfactory for a good functional result.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

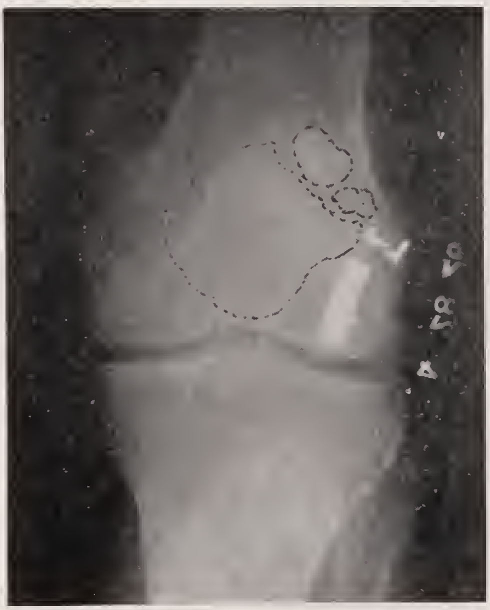

Fig. 1. Right patella (Case II).

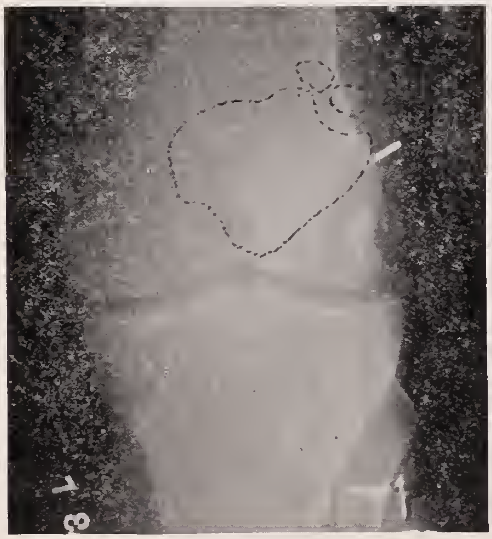

Fig. 2. Left patella (Case II).

Cases IV—XI wish to emphasize two points in considering foot injuries: First, that if there is the slightest likelihood of a bony injury, roentgenograms should be made; and secondly, that if the usual lateral view does not show you the suspected pathology, views of the foot in other positions should be obtained. This slide reveals the commonest fracture in the foot, base of the fifth metatarsal, and is the most frequently overlooked. If you are uncertain whether you see a fracture or a normal epiphyseal line, get a picture of the opposite fellow in the same position.

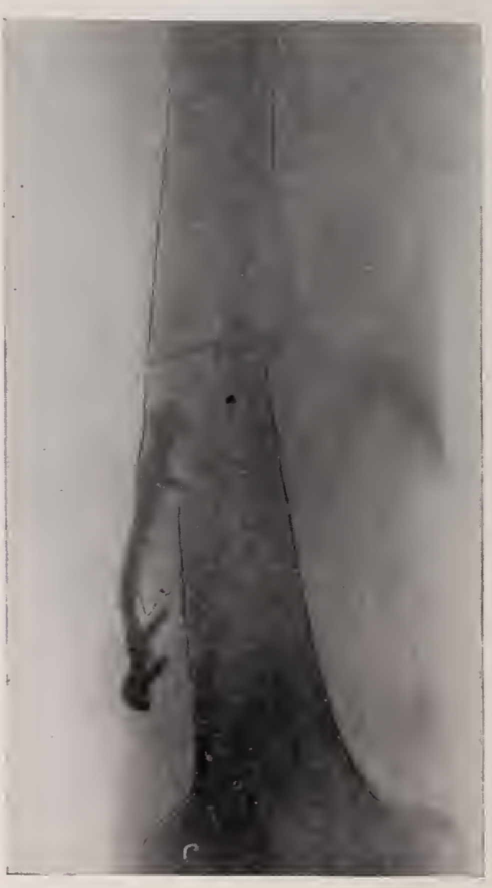

Fig. 3. View on admission to hospital (Case III).

Fracture of the astragalus, often diagnosed as a simple sprain.

Os trigonum. This is included here because from time to time we see this diagnosed as a fracture of the posterior process of the astragalus.

Fracture dislocation at medial tarsal joint. Presented because of mechanism necessary to effect reduction.

Fracture of the os calcis. Roentgenogram made immediately following injury. Diagnosis: No bony injury. Persistence of pain and swelling; hence, the above roentgenogram, the second one in the case. When displacement is slight and there is some uncertainty about the presence of a fracture, the ventro-dorsal view leaves no question.

Another fracture of the os calcis, in which a roentgenogram was made the day of the injury, and a diagnosis of no fracture made.

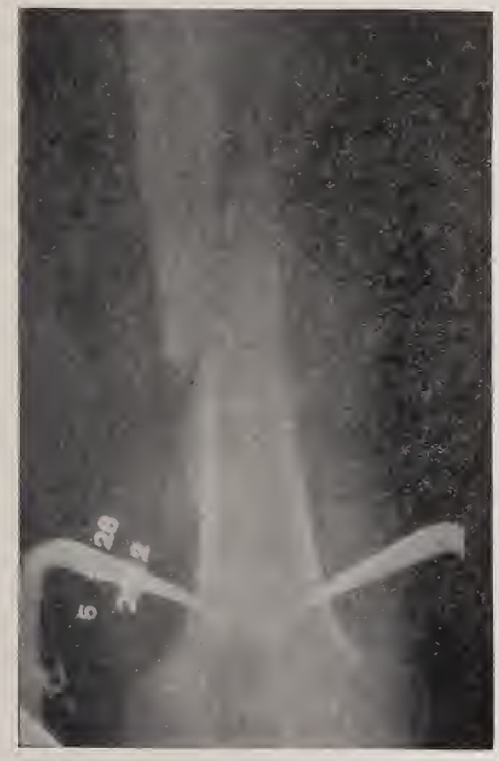

Fig. 4. "Ice tong" traction applied (Case III).

Another fracture of the os calcis with more marked displacement of the fragments. This is introduced with just a word regarding treatment. This patient was considerably helped by a properly fitting Whitman footplate or "arch-support" which enabled him to carry more of his body weight on the outer border of the foot, and gave his peroneal tendons slightly more room.

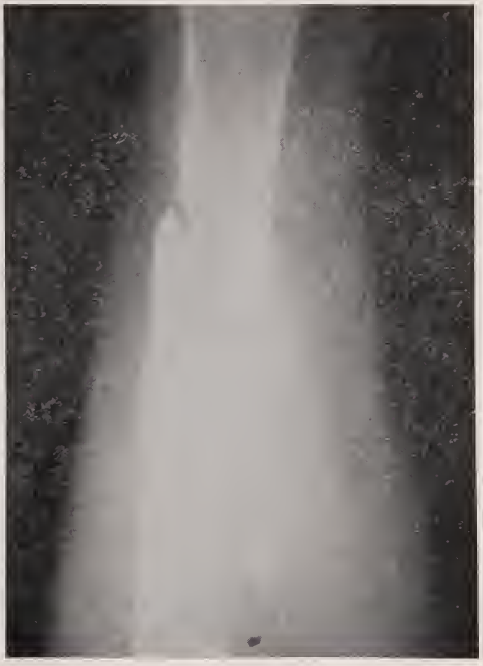

Fig. 5. Final result (Case III).

(The lantern slides shown above were reproductions of the roentgenograms in each case).

PRESENTATION OF PATHOLOGICAL SPECIMENS: CARCINOMA OF THYROID. LYMPHOSARCOMA OF DUODENUM*

B. CARL RUSSUM, M. D.,
Department of Pathology, Creighton University, College of Medicine,
Omaha, Nebr.

I have two interesting pathological specimens, together with the clinical histories, to present:

Case I. The first is a carcinoma of the thyroid. While this is not a disease of such extreme rarity, still the uncommonness of the condition — two in a series of over 500 autopsies at St. Joseph's Hospital— and the completeness of the postmortem specimen, makes it worthy of presentation.

Clinical History: This patient was a woman of 76, housewife, admitted 2-22-'26 to St. Joseph's Hospital on the service of Dr. A. F. Tyler. She had had a goitre since the age of 16, with no symptoms. About two months ago she began to experience difficulty in swallowing, and for the preceding two months had not felt "just right". The left side of her neck began to enlarge and has become progressively larger and for the past two weeks she has had difficulty in swallowing.

Physically she was a well preserved female of about 75. The thyroid was enlarged, with firm masses in each lateral lobe. The cervical nodes were enlarged. There was dysphagia. Laryngoscopic examination by Dr. B. M. Kully showed the left vocal cord completely paralyzed, weakness in abduction of the right cord, subglottic swelling and a mass in the posterior and left wall of the trachea, with edema and fixation of the left arytenoid.

There was enlargement of the heart to the left and downward, with a systolic murmur at the apex and transmitted to the axilla.

In the urine there was 2 plus albumin. The hemoglobin of the blood was 65, and the leucocytes 8,650.

She was treated with deep x-ray therapy. She was unable to sleep and complained considerably of pain in the throat. The pulse became weak and irregular; she became dyspnoeic and finally died on 3-14-'26.

Autopsy findings (important items only): There was found a scirrhous carcinoma of the left lobe of the thyroid gland, with ulceration through the oesophageal wall and into the trachea, with an involvement of the left vocal cord. The left common carotid and vagus were compressed by the growth. The aortic arch was diffusely dilated, with only a moderate degree of atherosclerosis.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

Microscopically the tumor mass seems to arise from a papillary adenoma and to become less mature as it invades the tracheal and oesophageal walls, where there are masses of polygonal and even some giant cells growing in all directions through the tissues. Any who are interested in seeing the slides from this specimen, which are now passed about for inspection, can see them under the microscope at the rear of the room, where Dr. Ruckensteiner will be glad to demonstrate them to you.

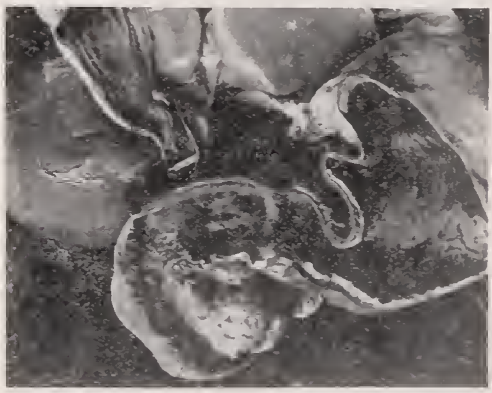
Fig. 1. Photograph of gross specimen, showing under surface of liver, gall-bladder and dilated bile ducts, stomach, and thick walled duodenum at lower left corner.

Case II. This specimen is one of great rarity. It is a primary lymphosarcoma of the duodenum.

Clinical Findings: This patient, a female of 60, entered St. Joseph's Hospital 3-19-'26 on the service of Dr. F. J. Schwertley. For the past nine months there have been nausea and considerable eruction of gas. About an hour after meals there have been cramps relieved by vomiting. Similar attacks of pain have come on at night and were relieved by vomiting bile stained fluid. Soda relieved pain. No blood in vomitus. Loss of weight, chills, and weakness, and a moderate amount of jaundice during past week.

Past personal and family history irrelevant.

Physical Examinations: Jaundiced sclerae; soreness over right rectus. Smooth, fluctuant mass below costal margin on right side. A diagnosis of carcinoma of the duodenum was made and a gastrojejunostomy done on 4-4-'26. She vomited a great deal after the operation and required frequent gastric lavage. She died on 4-8-'26.

Autopsy Findings (important findings): The wall of the duodenum was found much thickened and rigid. The bile ducts were dilated and thickened. A diagnosis was made of primary lymphosarcoma. This diagnosis was confirmed by microscopical sections, which are also available to those interested here this morning.

This condition is quite rare. Lymphosarcoma is rare enough in the gastrointestinal tract, but when it does occur, is usually found in the stomach or lower ileum. I have never seen one in the duodenum before, and available literature mentions it as quite rare.

ALLERGEN SENSITIZATION TEST*

E. L. MacQUIDDY, M. D.,
Omaha, Nebr.

It is with an apology I talk about the allergen sensitization test. It is simply something I have been interested in as a side line for five years, and have been playing with it more or less. We are getting now to where we feel we know what we can do, and feel a little bit surer of ourselves.

Three things we like to consider under the allergen sensitization test are: First, urticaria; second, hay fever; and third, asthma. I like to consider them in that order because if you will consider hay fever as simply an irritation of the mucous membrane of the nose, I think you can understand it better than to consider it in any other pathological light. Because it has a mucous membrane, it is easily irritated. Because the mucous membrane is irritated, you get a discharge. You get no discharge from the skin because there are no mucous glands in the skin. Otherwise we would get a moist appearance of the skin in urticaria as in hay fever.

In asthma, you have the same thing true of the mucous membrane lining of the lung. You have an edema and extra amount of secretion in the lung. Most of them are paroxysmal in type. They come on and exist for a short time, and tend to progress.

The more we get into it, the more we feel we can find out the cause. I am not near the enthusiast as such men as Roe, Cook and others, who are doing a lot more work than I am on it, when they claim they can find the cause in 70 to 80 per cent of the cases. That is so much higher than my batting average. I cannot touch it.

There are several interesting things about these types of cases. Heredity certainly plays a strong part. I should imagine if you get a careful history, in almost 50 per cent of the cases you will get a hereditary element. In two of the cases I shall show you this morning, one is father and one is son.

With urticaria, the causes are almost the same as in asthma. You can find the food allergen, and the allergen which comes from irritations in the air. I have a patient who, if he goes near a sunflower plant, develops urticaria. If he stays away, he has no trouble. One other factor is drugs.

It is interesting to find out urticaria is more common than we had supposed. Lots of people call it "hives." It is a transient affair with them, and lasts twenty-four hours or more. They forget it until you ask if they have had hives, and a large number will say "Yes." Probably several in this room have been subject to hives.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

In Nebraska hay fever, we have largely the ragweed (ambrosia) and lambs'-quarters or chenopodium album. I have had one or two from other causes, but ragweed is the chief offender in this part of the country. With some we have nice results; with others, not so nice. When you try to desensitize and do not get good results, you have not carried your experimentation far enough, and have left out an offending plant or have not thoroughly desensitized your patient.

Asthma is the biggest bugbear, because the patient may not only be sensitive to pollens in the air, but you have the seasonal asthma, and can also have food asthmas which may come any time, and your bacterial asthmas come any time. It is the immense amount of work in trying to find the causes that discourage most people. You can not do it in less than a week, and probably must run fifty to a hundred tests before you can find out the cause of the asthma, unless you are lucky and find it right away.

In most cases in children, it is the animal dandruff that causes your asthmas. If a child under ten years of age is brought in, it is easiest to run your animal dandruff first. A child of six was brought in. I had run three when we came across dog hair. Keeping him away from his dog has kept him absolutely free from asthma since, and that was pretty nearly a year ago. It is not hard to cure if you can find the cause.

When you come into the food allergens, wheat is a common offender, and it is impossible to cut off wheat. I tried to take a patient off wheat some time ago, and endeavored to find a rye bread in Omaha, but I found there is not a rye bread made here. The so-called rye breads have at least 25 per cent of wheat flour. Asthmas after fifty years of age are largely bacterial in origin.

There is one phase which we have not touched which I think we should consider: That if you can get allergic reaction of the mucous membrane of the nose and mouth, you can get it of the gastro-intestinal tract. Some of our vague abdominal pains coming rapidly and lasting a short time, I think we have a right to assume are allergic in character.

I should like to demonstrate the hay-fever cases I brought up here. I hope these cases will perform "according to Hoyle."

Case No. 1. Here is Mr. B., Sr., who is sensitive particularly to lamb's-quarters. Ragweed will come up a little bit later. He is sensitive very slightly to sunflower, and I ran two controls to show it was not the scratching of the skin which produced the wheal. Here is a large wheal coming up due to the lamb's-quarters.

Case No. 2. Here is Mr. B., Jr. I brought these two cases because they are father and son. They are both hay fever victims. These two have performed very nicely. The upper test is ragweed, which is positive; the second is the lamb's-quarters, slightly positive, and the third is the control. I am using the positive allergens only to show you the results here.

Case No. 3. This is Mr. McG. He is the most interesting of the three. We have no hereditary history, his folks were born and raised in the Philippine Islands. He was here two years before he developed any hay fever symptoms. He begins early in the spring to have a coryza. It is not a true hay fever, but a slight irritation of the conjunctiva. Later he gets a hay fever; still later, a true asthma. The first one you see is the dandelion. He has rather a marked reaction to dandelions. The sceond is lamb's-quarters, positive, and the third is ragweed, positive. The fourth is the control. It is interesting to note he has had practically five weeks of coryza, corresponding to the length of time we have had the dandelion—from practically early spring. Lamb's-quarters and ragweed not being out, he will not be bothered with hay fever and asthma until at a later period.

I feel rather chagrined on this case because I did not carry my investigations far enough last year. When I got a reaction to ragweed, I though I had solved the problem. We immunized him to ragweed. He had no hay fever, but he has his asthma.

DISCUSSION

A. F. TYLER, M. D., (Omaha): I should like to ask if he has checked up the relationship of the hypercalcemia to any of these allergens?

DR. MacQUIDDY: Yes, I have. I will run along beautifully for a while and think it has a lot to do with it; and all of a sudden I find a person with a hypercalcemia. I ran four cases two weeks ago and thought I was getting into something more, and the fifth man was a hyper, and one of the worst cases of urticaria I have had to deal with.

QUESTION: How do you account for this man's asthma?

DR. MacQUIDDY: Simply that we did not immunize against the cause of asthma. It was caused by the third offender, which we did not find last year. You can have that true. The hay fever . . . . will let asthma come on, where if it is not present, the asthma will not come on. It is due to an entirely different thing from your hay fever.

As there is no such thing as a real disinfectant for the mouth, it is poor technic to inflict the various unpleasant tasting antiseptics on the oral mucous membrane. All that can really be expected from a mouth wash, in the direction of mouth hygiene, is that it shall aid the tooth pick and tooth brush in the physical removal of a culture medium for microorganisms. Energetic swishing of the mouth wash back and forth and from side to side should be practiced rather than mere rinsing.—*B. Fantus, Jour. A. M. A.*

In the old days a doctor couldn't get rid of a troublesome patient by sending him to a specialist.—*Waterbury American.*

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THE ANNUAL CONFERENCE OF STATE SECRETARIES AND EDITORS

The annual conference of secretaries and of editors of constituent state medical associations, for 1926, was held at the headquarters of the American Medical Association, Chicago, November 19 and 20. The meeting was addressed by Dr. Wendell C. Philips, president, and by Dr. Jabez N. Jackson, president-elect, American Medical Association, each one stressing the value of the periodic health examination movement. "Educating the Physician for Public Health Speaking and for Periodic Health Examination" was the subject of a very able addres by Dr. Robert M. Schauffler, of Kansas City. "The Present Status of Periodic Health Examination" was presented by Dr. John M. Dodson, executive secretary, bureau of health and public instruction, American Medical Association.

The discussion brought out that the physician who has good case records has the better hold on his clientele; that the family physician can make satisfactory health examinations, if he will; that the profession, in great part, first needs to be educated to make these examinations; that the education of the undergraduate medical student in the matter of health examinations, and the education of the present generation of children now in school, to want to have health examinations will bring the best results; that periodic health examination of great numbers of people will not immediately result, since a movement of such magnitude needs much propaganda work through social agencies to fully impress its importance on the public mind, and that the movement for periodic health examination has gained more force in some localities than in others, depending on the forcefulness of those behind the movement in given localities.

"The Councilor District Medical Society" was discussed by Dr. D. S. Dougherty, secretary of the New York State Medical Society. The population of New York state, with its many large cities makes the councilor district medical society ideal in that state.

Dr. Morris Fishbein, editor, *The Journal of the American Medical Association*, gave his "Impressions of Six State Medical Associations," the annual meetings of which he visited. Needless to say the impressions were varied and for the most part complimentary.

Dr. G. E. Follansbee, Cleveland, urged "The Need for Uniform Constitution and By-laws" for all state associations. The Nebraska constitution and by-laws conform very closely to the suggested model.

Dr. D. E. Sullivan, secretary, New Hampshire State Medical Society, discussed "Closer Cooperation with other Professions and with the Laity."

"The Part of the State Medical Journal in Medical Organization" was presented by your editor.

A movement to assist the indigent physician was presented by Dr. George H. Simmons, editor emeritus of the Journal A. M. A., of which more will be heard later .

Persons privileged as are your secretary and your editor to attend these conferences are very fortunate indeed and cannot help bringing away inspiration to better things in medical organization, medical economics, medical practice and welfare work.

STANDARDIZE

Standardization of those who engage in the healing art must come. Education in the sciences fundamental to medicine is considered by all educators of note as the proper move in this direction. Let all practitioners of the healing art conforms to this fundamental; then let them treat patients according to their own methods.

Your President Visualizes the Signs of the Times

DR. HARRY E. POTTER

Dr. Harry E. Potter was born at Olney, Ill., February 21, 1876, came to Kansas with his parents when ten years of age and was reared on a farm. He attended high school and normal school and taught for three years. Graduated from the University Medical College, Kansas City, Mo., 1900. Practiced at Broken Bow 2 years, Endicott, 5 years and 19 years at Fairbury, his present location. Was delegate to the Republican National Convention at Cleveland in 1924. Has been councilor from the Seventh District since 1918. His family consists of wife and three children—two girls and one boy.

We are beginning the fifty-ninth year of organized medicine in Nebraska. This period has seen the transition of Nebraska from a frontier state to a commonwealth, well organized in all social, economic and political fields. From frontierism we passed to the state of more or less stable organization of the eighties, and in the nineties we experienced a period of unrest and radicalism, which was an expression of the unsettled state of society in general. The period from 1900 to 1916 was marked by stabilization and standardization in all fields of endeavor. 1916 to 1925 stands out as another period of unrest with the questioning of all established values. Sociologists and economists point out that we are now passing into a period of more or less even tenor.

The conditions of the times are always reflected in medical activities. As radicalism and questioning of values have been the spirit of the past decade, we find in medicine that the old values have been questioned, novel methods exploited, that the medical profession and the people in general have looked for things new and striking and pendulum of general opinion has swung to the extreme in many things. In such an unsettled state, it is natural that sound judgment, as real value, should be in abeyance. With more mature judgment physicians and those interested in the public health see with greater clarity of vision that human nature and human ills remain the same; that the relation between the physician and patient is and must always be much the same; that innovations have their place, not as novelties, but as modifications applied in the general progress of medicine. On the whole I feel that the period into which we are now passing will be one of truer appreciation of values and more real accomplishments.

During such a period our association should function more smoothly, sponsor needed legislation, assist the individual components in doing their part of the world's work, and with-all we should be entering into an unprecedented period of moral, mental and financial prosperity, which should be not for the benefit of the society, as a society, but for the good of our component members and those whom we serve.

—H. E. POTTER, President.

YOUR NEW YEAR'S RESOLUTION

There are fifteen malpractice suits pending in the courts at this time.

Each one will cost in money and time approximately $2,000 to defend.

Every one of these cases can be traced to a volunteered or a paid Medical Opinion, secretly or openly given.

The outcome of these cases will depend upon whether some doctor gives a Medical Opinion in court in the form of a deposition or as a witness.

No malpractice suit will be brought without a Medical Opinion.

No malpractice suit can be sustained without a Medical Opinion.

No doctor can be compelled to form a Medical Opinion.

Are you going to volunteer the Medical Opinion that will start another suit or sustain one that is pending?

Make your New Year's Resolution—"No Medical Opinion to Start or Sustain a Malpractice Suit and no Violation of a Privileged Communication."

—Czar C. Johnson, Medical Counselor.

LEGISLATION

The next session of the Nebraska State Legislature will meet in Lincoln early in January, 1927. This means of course that there will be the usual number of bills inimical to the public welfare introduced, and as usual it will be left to the medical profession to defeat them. Also this year for the first time in several years, some new constructive legislation will be attempted. This means that every member must be willing to do his part, if we are to be successful. Don't wait to be called on, but see your friends and get them to help you. You men at home, with the help of your lay friends can more easily explain things to your legislator than can the handful of us here on the field. It is only by united effort that we will succeed; so this is an appeal to each and every one to be ready in case of need.

—R. B. Adams, Sec.-Treas.

ANNUAL DUES—CALL FOR PAPERS

The annual dues for 1927 become due January 1. Please send them promptly to your County Secretary, so that he can make his report early in the year. They are $8.00 plus the amount assessed by your County Society.

Any physician who is a member of The Nebraska State Medical Association, who wishes to read a paper before the annual meeting in May, may send his name and title to the secretary's office, Center McKinley Bldg., Lincoln, Nebr.

—R. B. Adams, Sec.-Treas.

THE RADIOLOGICAL SOCIETY MEETING AT MILWAUKEE

The twelfth annual meeting of the Radiological Society of North America, under the presidency of Dr. E. W. Rowe, Lincoln, Nebr., took place in Milwaukee, November 29th to December 4th. It was a long session, running six days and six nights. Every meeting was crowded, and for the officers and certain committee men there was very little time even for meals or sleep. In addition to the regular session, which began at eight and ran through until ten o'clock and even midnight, there were daily clinics and moving picture demonstrations. The attendance was the largest on record — 856 registered. At some of the semipublic meetings about 3000 were in attendance. A splendid scientific exhibit, as well as an extensive commercial exhibit, was conducted. The meeting was held in the Auditorium. At first it seemed a disadvantage to be away from the hotels but the public auditorium is so well equipped for the needs of a medical organidation that criticism grew less as the days went by.

In the regular session, the following subjects show the range of the program:

"The Use of Lipiodol in Diagnosis", "Intraoral Cancer"; "Coloid Lead in Cancer"; "Massive Collapse of the Lungs"; "Diseases of Children"; "Medical Education With Reference to Roentgenology"; "The Diagnosis of Sinus Diseases"; "Cholecystography and a New Dye"; "Intracranial Lesions and Ventriculography"; "The Treatment of Thyroid Diseases".

In the clinics, injection of the lungs and sinuses with lipiodol was demonstrated.

Special mention should be made of motion pictures showing the action of the circulation of the blood in the terminal arteries by Dr. E. A. Pohle of Ann Arbor. From the universities of Michigan, Wisconsin, Illinois, and Columbia and Johns Hopkins University were mainly drawn the scientists, who presented the advancement in our knowledge of physics and biochemistry. Dr. Maude Slye read a paper upon cancer. She offered proof that the clinical behavior of cancer in the laboratory is unlike any germ disease and the discovery of the inheritability of cancer is the most helpful discovery of recent years. Dr. Hickey of the University of Michigan, together with others, discussed the relation of roentgenology to medical education, showing the value which was being derived in that institution from the introduction of courses in the freshman and sophomore years, as well as in the clinical years. Roentgenology as a specialty, however, belongs to the post-graduate school.

It was interesting to note at the banquet that an attempt to introduce "off stories" was severely dealt with. One very prominent man in the profession seemed to have misjudged his audience and was compelled to make a complete change in his speech in order to make it fit the high tone of the evening. Memorial exercises for the dead, the awarding of gold medals, key-note speeches on medical ideals well above the common plane of suggestive and indecent stories were given.

Time will not permit of a further review of the meeting but, in closing, I must mention a few things. A semipublic meeting was held, when the Wisconsin State Medical Society, the Wisconsin Dental Society and their friends thought it worth while to bring together those interested in general medicine or in other specialties, as well as many laymen who are interested in roentgenology. Dr. Coolidge demonstrated his cathode rays at this meeting. Dr. William J. Mayo talked on cancer, and Dr. Price, of Western Reserve, talked on the relation of focal infections to public health. There were one hundred and twenty papers. All but two of the essayists were present in person.

There was a general complaint because of the crowded program and the long hours. It is imperative that changes be made here, as in other societies, to either divide into sections or read by titles or abstracts many of the papers. Those who go for these meetings should have some time for recreation and the normal mode of life.

—* * *.

MEETING, NEBRASKA SECTION, AMERICAN COLLEGE OF SURGEONS

A meeting of the Nebraska Section, American College of Surgeons, was held at Grand Island, November 16, last. It was largely a clinical meeting. Beginning at 8:30 a. m., operative clinics were given by Drs. B. R. McGrath and E. G. Johnson of Grand Island in general surgery and a throat clinic was given by Dr. G. H. Fox of Kearney. Bone graft for non-union, osteomyelitis, pelvic infections, various types of hernia, undescended testicle and tonsillectomies were presented. At the afternoon meeting at the Yancey hotel Dr. C. A. Roeder, Omaha, described a new and ingenious operation for vesico-vaginal fistula; Dr. W. L. Shearer, Omaha, gave an illustrated talk on "Dental Infections"; Dr. E. G. Johnson, Grand Island, presented cases of ovarian disease in girls with disturbance of internal secretions and precocious development of sex characteristics; Dr. B. R. McGrath, Grand Island, gave a dry clinic on compound fractures, illustrated by slides.

A banquet in the Masonic Hall followed by talks by Mr. E. J. Wolbach, president of the Chamber of Commerce and by Dr. J. Stanley Welch, Lincoln, and Dr. C. A. Roeder, Omaha, closed the meeting. While the attendance was not large, the interest and enthusiasm, fully justified the meeting at Grand Island.

FADS AND FANCIES IN THE PRACTICE OF OTOLARYNGOLOGY

The article by Shambaugh, *J. A. M. A.*, November 20, 1926, on, "Fads and Fancies in the Practice of Otolaryngology," should not be allowed to pass without the notice of the entire medical profession. It not only applies directly to those who practice the mentioned speciality but also casts its reflection upon the entire medical profession. It is at last beginning to appear as if we might awaken to the fact that removal of all possible surgically removable parts and then making a diagnosis afterwards is very poor practice. Also the simple fact that a person could be convinced before the operation was done that it should be done is only an indication of salesmanship and not of medical knowledge. It may not carry with it an elimination of the many other conditions that may cause the same affliction.

In a former article, *N. S. M. J.*, March, 1919, I reported the failure of 50 per cent of the tonsil operation and urged more careful diagnosis. If we are to have the continued confidence of the public, we as physicians, must give a service that is more nearly free from mistakes.

—D. D. Sanderson.

EDITORIAL PARAGRAPHS

Hygeia should be in every physician's reception room for the benefit of waiting patients.

State presidents and state secretaries should feel it a duty to attend all council district meetings.

The new pharmacopeal name of our old friend, the compound cathartic pill, is "compound pill of mild mercurous chloride."

Dr. Alfred J. Brown of Omaha has written the History of Surgery for Nelson's Loose Leaf Living Surgery, just off the press.

Bernard Fantus says: Chalk, carbonate of lime, is a better remedy in hyperchlorhydria and gastric ulcer than bircarbonate of sodium.

President Glenn Frank, of the University of Wisconsin, is quoted as saying that our national motto seems to be: "Millions for pills, but not one cent for prevention."

In Ohio white crosses are erected at places on the highways where motorists have met violent deaths. The crosses average about one for every two miles travelled on the main highways. In some placese there are as many as six crosses.

Apparently dope fiends are again abroad in this state, for several medicine cases have been reported stolen and when found were rifled of narcotics contained therein. Several physicians' office also have been entered within the last two months.

The World Conference on Narcotic Education has adopted a resolution calling for a week to be observed throughout the world as Narcotic Education Week, the last week in February of each year, and Congress is being asked to adopt a joint resolution for the participation of our government.

With the advent of January we are reminded that another year is before us and good resolutions are in order. Those in charge of the Journal have some very good things planned for 1926. The January number is perhaps a fair example of what we hope the Journal to be during the current year. We feel rather proud of this number and we hope it pleases the readers.

Another European tour under the direction of the Inter-State Post-Graduate Medical Association, to visit the following medical centers will leave in May: London, Edinburgh, Oslo, Stockholm, Upsala, Lund, Copenhagen, Hamburg, Strassburg, Heidelburg, Frankfort and Paris. The group will be limited to the number that can be comfortably accommodated at the clinics.

We have in the past published a series of character sketches with half tones of medical men who are historic characters in the state, carefully guarding the statements made and avoiding laudation. We believe this an interesting and justifiable feature in medical journalism, and we welcome suggestions for other sketches along the same lines, of other medical men and women in Nebraska.

Chicago has a Maternity Club limited to 100 members. The initiation fee is $1.00 and the dues 5 cents per week. When a club member has a baby the club pays her $25.00 and furnish the layette. In the case of twin births the club pays double benefits. Fourteen birth benefits were paid for the first 11 months of 1926. The club is ten years old and there are 80 club babies whose mothers received the benefits.

A membership in your county society, makes you a member of the Nebraska State Medical Association, but does not make you a fellow of the American Medical Association. To become a fellow of the American Medical Association, a physician must be a member of his county and state association and must pay the five dollars for the *Journal of the American Medical Association* which also pays for the fellowship in the A. M. A.

In a stray medical journal on the editor's desk, a physician relates that he became afflicted with nephritic colic and for ten days quietly suffered and injected morphine for relief. He then entered a hospital and when his history was taken he answered that he had injected morphine for relief the past ten days. The person who made the case record put down "Dope Fiend." On the strength of the record and in spite of his protestations and attempted explanations, the attending physician would not give him any morphine and left him to suffer. He finally found himself in another hospital and eventually got a sympathetic hearing. Seems possible, but hardly probable.

It will interest the Nebraska profession, especially those members who personally know Dr. Irving S. Cutter, that under his deanship and under his direct supervision, Northwestern University, Chicago, has just about completed and is now occupying a 14 story model medical college building at a cost of almost $3,000,000.

Vital statistics report for 1925 issued by the Bureau of Health of Nebraska shows the following totals:

Births	29,179
Deaths	12,475
Stillbirths	896
Deaths under one year	1,679
Maternal deaths	160
Tuberculosis (all forms)	438
Cancer (all forms)	1,196
Heart Disease (all forms)	1,652

A RECENT VISIT TO MAYO CLINIC. ITEMS OF INTEREST AND COMMENT.*

CLARENCE EMERSON, M. D., F. A. C. S.,
Lincoln, Nebraska.

In recording impressions received by a sojourn in the Mayo Clinic, some generalities may be expressed at the outset. The visiting physician's attention is perhaps first directed toward the magnitude of the organization and the volume of work carried on. I happened to arrive in the early morning and "nosed about" the clinical building for a time before patients or physicians arrived. I saw the early morning lines of patients in front of the registration window — one line for new arrivals and one or two others for patients whose examinations had previously been started. By eight o'clock, at a rough estimate, one hundred fifty patients had registered and had been assigned to various departments. I was told unofficially, that 72,000 went through the Clinic last year.

The general waiting room will seat comfortably two or three hundred patients and friends. The doctors' private examining offices are quite small, poorly lighted and not as cheerful as many of ours. At first glance they appear inadequately equipped as compared with ours, but the special equipment, such as cystoscopic rooms, x-ray apparatus, clinical laboratories, etc., are in detached units. Every conceivable method of examination is conveniently available.

One of the largest medical reference libraries in the world is here. The books and periodicals are systematically shelved and supervised by experienced librarians. Study tables are available. On one of these I noted a number of books and current magazines with pages marked by reference cards. These cards had the periodical name, date, volume, etc., written in the blank spaces provided for that data and room for notations by the physician. Evidently a librarian had searched for and arranged conveniently the literature bearing on a certain subject, making a quick, easy reference available for the member of the staff who requested it.

The second impression uppermost in the mind of the recent arrival is with reference to the factors that have made this little city the mecca of health seekers. Something unusual had to furnish the magnetism that attracts the sick in such numbers from such scattered areas to a small community not specially favored by transportation facilities. The conditions that now pervade the clinic undoubtedly reflect the inspirational genius of its founders. There are some criticisms heard of the Mayos, but when you get there it disappears. They certainly are doing good work. No one can observe the work of these clinicians and listen to their discussions without knowing that honesty and sincerity are their first essential principles of practice. Bias and prejudice are eliminated. As true scientists they pursue search for medical facts and apply them conscientiously for the welfare of their patients.

The personnel of the Mayo Clinic throughout its organization is pleasant and obliging. The orderlies, the chiefs of departments and even the Mayos themselves are willing to go to great length to accommodate the visiting physicians. No doubt the inquisitiveness of the searchers after medical facts, who are perhaps over-enthusiastic at times in their eagerness to assimilate knowledge, becomes irksome — yet patience, cheerfulness and earnestness are always in evidence. Dr. Harrington spent thirty to forty minutes at the close of his clinic discussing with a group of four or five visiting physicians, the problems of thoracic surgery. I made a call on Dr. MacCarty's pathological laboratory and was welcomed and favored with the opportunity to view polychrome methylene blue stains of live tissues, some of which were carcinoma. He showed me the method of measuring the nucleus and cytoplasm of the cell by means of a scale reflected on the microscopic field. He has contended for some time that he is able to tell a single carcinoma cell by the proportions of nucleus and cytoplasm.

The perfection in surgical technic appears to be in the direction of careful pains-taking attention to detail rather than to "flourish and gesture". Excessive speed or "new-fangled" technical notions are not the goal of their ideals.

Dr. Will Mayo in discussion of carcinoma manifested an open-minded and unbiased attitude in search for medical truth when he said, "we are too intolerant of the opinions of others". "We deride and reject suggestions that do not fit in with preconceived notions." He referred to Glover's carcinoma serum, to the colloidal lead treatment of carcinoma and the Detroit serum, and deplored the attitude of the profession because of its intolerance toward them. He believes that the growth of cancer is dependent on nuclear activity and that all these substances are nuclear poisons that definitely influence cancer, although they do not cure it. He disapproves of irregular practices or exploitation of any cure, but not rejection of it if effective. Such activities should be encouraged in the hope that they will lead to the finding of a cure. He believes that since some people do not get cancer when subjected to irritation and others do, that something is different in one group than in the other. "Some day an agent will be found that will make the cancer susceptible group like the cancer resistent group, and it will probably be something that will be administered universally as a prophylactic."

This spirit of toleration, of optimism and of earnest conscientious service is the root and foundation of the success of the Mayo Clinic. An associate visitor expressed the opinion that this tolerant attitude of the Mayo Brothers and their appreciation of the work of others will make them live in history as two of the big men of this day.

At St. Mary's hospital I watched Dr. Will Mayo operate on four cases:

No. 1. A case of cholelithiasis. The gall-bladder was sacculated and divided into pockets. The patient was deeply jaundiced. No stone was found in the common duct. The obstruction was attributed to pressure from the greatly distended gall-bladder against the duct. Several large stones were removed from the gall-bladder and the pockets broken through to make one. He stated that in such a case cholecystectomy was inadvisable because the common duct is obstructed by pressure or inflammatory swelling and drainage through the gall-bladder offered the best chance of relief. A different method of drainage than I had previously seen, was used. A ½-in. rubber tube was passed to the bottom of the gall-bladder. A strip of iodoform gauze was placed in the gall-bladder at either side of the tube, the purpose being to insure wide opening of the gall-bladder and to carry out any remaining small particles of stone on its removal. Two thin walled, soft rubber tubes about one inch in diameter were placed in the peri-cholecystic space. He remarked that post-operative hemorrhage due to jaundice was not apt to be immediate but is likely to occur a few days subsequent to the operation.

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*Read before Staff of Lincoln General Hospital, June 7, 1926.

No. 2. A case of colloid carcinoma of the pars pylorica. The preoperative symptoms were pain, vomiting and loss of weight. There was no acid in the stomach juice and a marked filling defect was observable on the roentgenogram. The growth, though quite large, had not invaded the gastro-colic omentum and lymphatic involvement was slight. Billroth's operation I saw performed by the following technic:

1. Supra-umbilical celiotomy.
2. Delivery and examination of stomach and colon.
3. Suture ligature of arteries.
4. Segment ligation of gastro-hepatic omentum.
5. Segment ligation of gastro-colic omentum. In performing this step great care was taken to preserve the blood supply to the colon by placing the ligature and making the incision close to the stomach. By successive openings through the omentum clamps were applied on either side and the grasped portion of omentum ligatured.
6. Clamps were applied to duodenum and stomach well away from the growth.
7. Stomach segment excised by knife.
8. Proximal segment was sutured through and through until an opening equal to the duodenal opening remained.
9. Stomach was emptied by suction trocar.
10. A second tier of Lembert's sutures inverted this segment.
11. A gastro-duodenostomy was done.
12. Pieces of omentum were stitched to the suture line.
13. Thorough irrigation and suction cleansing of the entire field.
14. Closure without drain.

If the growth had extended along the vessels in the gastro-colic omentum, partial colectomy would have been necessary. I saw a beautiful frozen section preparation of the growth that showed typical colloid carcinoma. A single carcinoma cell had the proportion of nucleus and cytoplasm characteristic of malignancy.

Dr. Mayo performed two Kraske operations for carcinoma of the rectum. Dr. Sistrunk had done the first stage and Dr. Mayo performed the Kraske operation as a second stage procedure. After he had made the opening in one case he decided the glands in the pelvis were involved and decided to discontinue the operation. A first stage performed by Dr. Sistrunk two weeks earlier made a colostomy and cut off the lower segment by forming a pelvic "diaphragm". In connection with the Kraske operation he paid a fine tribute to the genius and originality of Dr. Coffey, of Portland, and credited him with the two-stage factor in the technic.

(To be continued)

THE SOCIETIES

At the **Omaha-Douglas County Medical Society** meeting of October 16, 1926, Dr. B. C. Russum, of the Department of Pathology, Bacteriology, and Hygiene, Creighton Medical College, presented an interesting autopsy finding, in the shape of a brain containing a very large cerebral hemorrhage, a "surprise" finding in the case of a man with the following history:

Male, O. G., aged 76, admitted to St. Joseph's Hospital 12/14/25, where he died six hours later. Relatives said that they found him unconscious on the floor at 6:00 a. m. that date, and brought him into the hospital six hours later. There was no evidence of injury, no vomiting or bleeding.

In the past history of the patient there was evidence of feeble health for 12 years, but no similar attack and no definite disease beyond "hardening of the arteries".

Physical examination on admission showed him to be comatose, quite aged, with palpably hardened arteries. The pupils were round and equal, but did not react to light and accommodation. The face was cyanosed. The heart rate was rapid and irregular Blood pressure 200-100. Coarse rales over both lung bases posteriorly. The knee jerks were exaggerated, but other reflexes normal. The breathing was stertorous. Pulse gradually became weaker and he died six hours after admission.

Autopsy — There was found the anticipated fresh cerebral hemorrhage in the basal ganglia of the left side of the brain, due to rupture of one of the branches of the lenticulo-striate artery, with involvement of the internal capsule and the lenticular nucleus. The unexpected finding was a very large older hemorrhage into the right side of the brain, evidently of at least several months duration, involving a greater part of the white matter, the internal and external capsules, and the lenticular nucleus. The contents of this older hemorrhage were blood and clearer fluid, but the material was not as yet encapsulated. Other findings of importance were a marked atheroscleroisis of the aorta and the blood vessels at the base of the brain, and slight vascular changes of the kidneys.

Lantern slides were shown ot illustrate the extensive calcareous changes of the blood vessels in the older hemorrhagic area, the extension of hemorrhage along the perivascular lymphatics, and the large scavenger phagocytic cells seen in the neighborhood of cerebral hemorrhages.

The interesting finding of this patient was the large old cerebral hemorrhage, with no previous similar clinical atack of apoplexy.

—Earl C. Sage.

The regular meeting of the **Lancaster County Medical Society** was held November 2, 1926, at the Orthopedic Hospital, Dr. F. F. Teal in the chair.

The first paper of the evening was presented by Dr. Czar Johnson, entitled "Malpractice Suits".

The second paper of the evening was read by Dr. A. R. Mitchell, entitled "Medical Ethics". This paper was a religio-philosophical discussion of ethics. Dr. Mitchell carried his discussion from the earliest times up to the present standard. It was brought out that ethics rest upon the principle of right action, hence it becomes at once a moral question which is subject to multiple amplification as it bears upon the complex affairs of life. Through the religions of the ancient Hebrews, Confucius, and Brahma, the one central idea points to that of morality. The essayist feels that the profession has wandered somewhat away from the traditional ethical standards and makes a plea that we still cling to the truths and traditions of the past. He is not in favor of the commercial groups and commercial clinics that exist throughout the medical profession. He feels that the medical profession has through time placed itself in an honorable and deservedly exalted position before the world, and consequently decries any descent therefrom. The essayist decries the splitting of fees but feels there should be some equitable division of the responsibility in every case as well as of fees. He offers the proposition that the internist, who is the first responsible party in nearly every case, continue as the first responsible party, hire his surgeon as he would hire any other assistant, pay him for his services and both have care and responsibility for the case jointly. From this he deduces there would be no commercialism, just a true professional, not business interest. The most persistent and unchanging element in this world's life is man himself. Man reacts to new environments in his superstitions, but he is not different now than in the beginning. Our primary object then should be, now as in the past, to control or harmonize changing conditions that will not permit disintegration of the one great profession which knows mankind. If the medical profession falls apart, civilization will in time be almost completely checked. The essayist feels that there are but few places in medicine for the specialist. The doctor makes the plea for the call of the unworthy upon the carpet, that he should be made to feel the power that is greater than greed and selfishness. To do this would insure the maintenance of ethics, hence the moral stability of professional life.

The two papers were jointly and variously discussed.

—Arbor D. Munger, Sec.

At the meeting of November 15, an unique program was put on at St. Elizabeth's hospital, Dr. A. R. Mitchell, presiding, as follows: Thirty Minutes of Entertainment, Nurses' Training School. Surgical room—"Surgical Treatment of Acute Abdominal Diseases", A. I. McKinnon; "Cord Injuries, Czar Johnson. Urological room — "Papillomata of Bladder", E. E. Angle. Medical room—"Modern Methods in Diagnosis of Heart Disease", A. L. Smith; "Observations in Treatment in Neuro Psychiatric Cases", B. F. Williams. X-ray room—"Fracture of Neck Femur", Carl Kail. Laboratory room—"The Sedimentation Test", E. G. Zimmerer; "Cancer of the Uterus", W. C. Becker.

The **Cass County Medical Society,** November 13, at Nebraska City, featured the following program: "Tubercular Peritonitis", Dr. Max Emmert, Omaha; "The Examination of the Normal Subject", Dr. E. G. Zimmerer, Nebraska City. Dr. F. W. Heagey, Omaha, led the discussion.

The **Box Butte County Medical Society** at a meeting December 3, elected Dr. C. F. Johnson, president, and Dr. H. C. Walker, secretary.

The **Boone County Medical Society** over a dinner at the West hotel elected Dr. G. W. Sullivan, St. Edward, president; Dr. F. M. Barns, Albion, secretary-treasurer. Dr. Sullivan gave a travelogue on his European clinical tour of last summer.

The **Colfax County Medical Society** at a meeting in the city hall of Clarkson, November 16, elected Dr. F. G. Vosika, Clarkson, president; Dr. W. J. Kavan, Clarkson, secretary-treasurer. Medical economics in its various phases, was discussed.

The semi-annual meeting of the **Third Councilor District Medical Society** at Falls City, December 3, under the direction of Dr. C. P. Fordyce, councilor, was a gathering of more than usual importance. A clinic was given at the Falls City hospital in the morning and after the 6:30 dinner at the Hotel Weaver, Dr. R. L. Sutton of Kansas City, gave a popular lecture on "Tiger Trails in Southern Asia". The afternoon program follows: "Pyelography as an Aid to Genito-Urinary Diagnosis", Dr. A. F. Tyler, Omaha; "The Doctors' Policy", Dr. R. B. Adams, Lincoln, (secretary Nebraska State Medical Association): "Clinical Lecture on Dermatology", (With Round Table Discussion), Dr. Richard L. Sutton, Kansas City; "Diseases of the Thyroid Gland", Dr. Clayton H. Andrews, Lincoln; "Clinical Studies of Intestinal Obstruction", Dr. B. L. Myers, Kansas City; "Shoulder Joint Injuries", Dr. Roy W. Fouts, Omaha; "Modern Medical Education", Dr. H. von Schulte, Omaha, (Dean, The School of Medicine, Creighton University). Dr. H. H. Potter, Fairbury, president-elect of the Nebraska State Medical Association, was present and spoke on medical association matters.

The **Sixth Councilor District Medical Society** meeting at Wahoo, November 15, under the councilorship of Dr. Frank Tornholm, put on the following program: "X-ray of the Sphenoids and Ethmoids", Dr. A. P. Overgaard, Omaha; "Results of Orthopedic Cases", (in moving pictures), Dr. J. E. M. Thompson, Lincoln; "Management of Ocular Emergencies and Complications", Dr. J. M. Patton, Omaha; "Medical Malpractice Suits", Dr. Czar C. Johnson, Lincoln; "Present Day Trends in Medical Education and Medical Practice", Dr. J. J. Keegan, Dean University of Nebraska College of Medicine, Omaha.

HUMAN INTEREST TALES

Dr. Daniel Dieter is a new physician at Otoe.

Dr. Mattie Arthur, Omaha, is spending the winter in California.

Dr. F. J. Wearne, Omaha, spent some weeks at the Mayo clinic.

Dr. I. E. Whitehead, formerly of Holdrege, has located at Alliance.

Dr. R. V. Witter, Bayard, has been in Denver for medical care recently.

Dr. R. D. Bryson, Calloway, has treated himself to a new building and office.

Dr. Paul Gillespie, Fullerton, is about to go to Vienna for advanced study.

Dr. A. F. Johnson, for several years located at Wausa, has moved to Ulysses.

Dr. and Mrs. B. B. Davis, Omaha, spent a part of the month of December in Bermuda.

Dr. A. E. Hedlund, Dalton, has been a patient at an Omaha hospital during the past month.

Dr. and Mrs. E. J. Latta, Hastings, started on a motor trip to California the last of November.

Dr. J. C. Malster, Stromsburg, will be a member of the Nebraska House of Representatives, this winter.

Dr. and Mrs. Herbert H. Davis, Omaha, Leave January 3, for an etxended visit to European clinics.

Dr. G. W. Sullivan, St. Edward, accompanied one of Peck's clinical tours to Europe during the summer.

Dr. I. L. Smith, Syracuse, has been a patient in an Omaha hospital, being treated for ulcer of the stomach.

It is announced that Dr. Earl C. Sage, and Miss Gertrude Emeline Stout, Omaha, were married November 29, 1926.

A typhoid fever epidemic of considerable proportion, supposedly milk-borne, was reported at Hastings last month.

Dr. and Mrs. F. A. Mountford, Davenport, Nebr., report the arrival of Roger Williams, a steady boarder, November 21, 1926.

Dr. H. P. Hall, superintendent of the Woodmen of the World memorial hospital, at San Antonio, Texas, visited in Omaha, recently.

Dr. A. E. Cook, Randolph, councilor of the Fourth District, and Mrs. Helen R. Buol, of Lincoln, were married November 17th, 1926.

Dr. A. N. Compton, a practicing physician at Valentine for thirty-five years, has retired from practice and has moved to Harlingen, Texas.

It is reported that St. Joseph's hospital, Alliance, has been placed on the fully approved list of hospitals by the American College of Surgeons.

Dr. L. L. Noble, wife and daughter, Holmesville, were the victims of an auto wreck, recently, being run down by another car. Luckily no serious personal injuries resulted.

The 110th Regiment Medical Corps held a meeting at Lincoln, Nov. 12. Colonel J. B. Clayton of the Seventh Medical Area addressed the meeting on "Mobilization". Dr. David C. Hilton is commander.

Dr. A. C. Stokes, Omaha, read a paper, "The Effects of Surgical Operations on Longevity", before the Polk County (Des Moines) Medical Society and the Medical Directors of Iowa Life Insurance Companies, December 11th.

The death of Dr. Peter Janss at Los Angeles is announced. This personage was many years ago located at Grand Island, from which place he did an itinerant practice over the greater part of Nebraska, specializing, mostly, in the almighty dollar.

It is a pleasure to note that Miss Gladys Kindred, daughter of Dr. and Mrs. H. L. Kindred, Meadow Grove, a senior of Rush Medical College, has been chosen a member of the Alpha Omega Alpha, national medical fraternity, for excellence in scholarship in medicine.

Dr. and Mrs. J. S. Welch, Lincoln, are about to start on a trip around the world to be absent 6 months. The itinerary will take them through the Panama Canal, Honolulu, the Orient, etc. Dr. Welch plans to spend several months at Vienna and Berlin before returning.

It is understood that the new Fraternity building in Lincoln, under construction, will, in effect, be a Medical Arts building, as special provision is being made for office facilities for the medical and dental professions and an auditorium and a library are a part of the scheme of interior arrangement.

To honor the memory of the late Dr. Georgia Fix, a pioneer physician of the North Platte valley, who died in 1918, by popular subscription a rustic monument has been erected over her grave. A brass plate attached to the monument bears the inscription — "In memory of Dr. Georgia A. Fix, pioneer physician. She passed away in 1918 after 32 years of faithful service in the North Platte valley."

NECROLOGY

John W. Thompson, Lincoln, Nebr.; Starling Medical College, 1885; a practitioner in Nebraska since 1886 in Furnas county, at Strang, 20 years at Sutton and for the past 6 years in Lincoln; member, Nebraska State Medical Association; died November 13, 1926, of pneumonia, aged 65 years. Dr. John C. Thompson, Lincoln, now taking post-graduate work in Vienna, is a son of the deceased.

Sydney S. Wilson, Nebraska City, Nebr.; University of Iowa College of Medicine, 1893; well known and able practitioner in his native city since graduation; member, Nebraska State Medical Association; president, 1926, Otoe County Medical Society; was instantly killed in the outskirts of town by the overturning of his car, on his return from a professional visit to the country, on the afternoon of December 16, 1926, aged fifty-three years.

He was a brother to Dr. J. S. Wilson, Nemaha, Nebr.

John C. Van Keuren, Omaha; Baltimore Medical College, 1901; practitioner in Omaha for quite a number of years; died after a two weeks' illness, following an infection of the index finger during a tonsillectomy, November 15, 1926, aged about 54 years.

Wren Morrow, Tekamah; Eclectic Medical College, Cincinnati, 1916; formerly in practice at Seward; member, Nebraska State Medical Association; died November 18, 1926, aged about 44 years.

Joseph Scroggs, Beaver, Pa., University of Pennsylvania, 1877; from 1890 to 1903 a practitioner at Lincoln, Nebr.; later for a number of years an ophthalmologist in California and Beaver, Pa.; died November 15, 1926.

Henry S. Lyman, Omaha; Columbia University, Medical School, 1899; blind and paralytic for 25 years; not in practice; died November 30, aged 56 years.

STREPTOCOCCAL INFECTION — AMMONIA INTERNALLY

Rp. Ammon. carbon	0.5
Liqu. ammon. anis.	5.0
Aqu. ad	200.0
Syr. simpl.	20.0

M. S. A tablespoonful every 1—2 hours.

This old prescription recommended by Prof. Unna (Hamburg) especially for the treatment of erysipelas, has now been foun dby Eytel (general practitioner in Spaichingen, Wurttemberg) to be a valuable reinforcement of the external therapy in many cases of phlegmons, puerperal fever, osteomyelitis, etc. (Injury to the exciting agent through increased alkalescence of the blood?) (M. m. W. No. 20, 1925).

TOXIN-ANTITOXIN

One hundred and fifty thousand children, most of them fully immunized with toxin-antitoxin, have been under the observation for a period of from one to five years through the Department of Public Health of Philadelphia, and none have given any marked reaction to toxin-antitoxin administration or have shown any tendency to protein sensitivity by test six months after the injections. Edward L. Bauer and H. B. Wilmer, Philadelphia (Journal A. M. A., March 27, 1926), are therefore convinced that, in the use of the toxin-antitoxin mixture properly made and with the protein removed, according to the methods of Park and of Banzhof, no hypersensitivity to horse protein is developed. Further, they are convinced that it is safe and indeed wise to use toxin-antitoxin in asthmatic patients known to be susceptible to diphtheria. Therefore, to assume that hypersensitivity is developed by toxin-antitoxin, one must first prove that hypersensitivity was not present before the administration of the toxin-antitoxin, since those hypersensitive to horse protein do not react to the infinitesimal amounts of protein in the toxin-antitoxin mixture advocated.

THE EFFECT OF GAS ANESTHETICS USED IN LABOR

A considerable discrepancy exists among the values obtained by many observers for the normal bleeding and coagulation time of the blood in the new-born. In an endeavor to discover this factor, the bleeding and coagulation time was taken by Heyworth N. Sanford, New Haven, Conn. (Journal A. M. A., Jan. 23, 1926), on 600 infants at birth and during the first ten days of life, the entire series covering a space of two years. Two hundred patients were delivered with ethylene, 200 with nitrous oxide, and the remaining 200 without an anesthetic. Nitrous oxide caused a prolongation of the average bleeding time at birth of one minute, and the coagulation time of two minutes. Both, however, corresponded to normal in nine days. Ethylene caused a prolongation of the average bleeding time at birth of two minutes, and the coagulation time of three minutes. Both, however, practically returned to normal in nine days.

The specialist is apt to interpret all abnormal symptoms in terms of his own particular specialty. In a headache, for instance, the neurologist sees some disease of the brain; the opthalmologist, some error of refraction; the gynecologist, some uterine trouble; the urologist, some pathology in renal function; the cardiologist, something wrong with the heart or circulation. Any one of these may be right, or all may be wrong, and the etiological factor may be an overloaded, sluggish bowel. If the specialist does not find anything abnormal in his particular field, the patient is passed along from one to another until, luckily, someone spots the trouble, or until the patience or pocket of the sufferer is exhausted.—Acheson, in Clinical Medicine.

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TREATMENT OF ACUTE CARDIAC TRAGEDIES*

A. C. MORGAN, M. D.,
Philadelphia, Pa.

As a rule, and this is no exception, when doctors, good fellows, get together, they smoke the pipe of peace, which is all right, but they have rotten ventilation. I wish we might have a committee on ventilation who would get some ventilation because I can give you enough hot air to last you all night.

I want to talk tonight about the treatment of three phases of acute cardiac tragedies:

First, Angina Pectoris.
Second, Coronary infarct or thrombosis
Third, Cardiac dilatation.

ANGINA PECTORIS

Angina pectoris and coronary thrombosis occur most commonly in males, though it affects, men or women of the higher walks of life. From our own ranks we pay a terrible toll to the Grim Reaper because of the tragedies that occur through these two affections in decimating the ranks of the medical profession.

Sudden death occurring in men and sometimes in women under the age of 45, who did not give a history of acute rheumatism, chorea or follicular tonsillitis, whether or not the Wassermann was positive, suggests the cold fact that those people pay that penalty because they had syphilis. That is a statement we have to make and have to confess it as a fact.

Why is heart disease so frequent and on so much of an increase? Perhaps because of affluence that comes to us; perhaps because of laziness accompanying automobile riding; because of the luxuries of life which are making us devotees of Bacchus if not of Venus. Why is heart disease increasing among professional men? It is not because syphilis is on the increase; but is it not because you and I as medical men are doing something we had not been doing before?

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*Address given before the Omaha-Douglas County Medical Society, October 26, 1926.

In the first place think of the life of ease we are leading, comparatively speaking. In driving automobiles, we are all proud to have the caduceus on our wheel, because the cop looks after us as we speed, with a sort of, "Well, you know Doc." and lets us go. We trespass on our rights, but we pay the freight just the same. We are given to over-eating, in these days of feasting, and I wouldn't detract at all from the opportunity and the occasion for feasting and fellowship, because the doctor of former years had to live too much alone and as a recluse. The doctor who drove hour after hour in a carriage usually lived in a little world of his own; he was not able to come in contact with his fellow practitioner, yet he developed a wonderful character and was and is the great man in medicine. I want to pay my tribute to the man in the country, and I want to tell you not to call him a "country doctor" any more or I will challenge you to something. I want you to think of him as the "doctor in the country." The ordinary idea is that the country doctor is a back number and all that, but he was taught in the same class you were, and has had to fight a good many more fights than you. The doctor in the country is the nobler man because he works against all odds and wins his victory. In the city we say, "send a sick man to the hospital"; we say, "get a consultant," we say, "we will go off on a hunting trip," or we go on the golf links—if anything is needed, call another doctor—we pass the buck, but the doctor in the country has to stick and he wins in the fight against the Grim Reaper. I pay sincere tribute to the doctor in the country; he is my co-equal, my associate, and I respect him.

A little thought here as to over-eating, because it leads to coronary thrombosis in particular. Lack of exercise, because of automobiling and the convenience and luxuries of life, make us an indolent profession insofar as physical activities are concerned. We overeat, we undersleep, we are under mental strain, we are doing more work than former generations before us, and we are paying the penalty because we are wearing out through our nervous mechanism by reason of this overwork. I am convinced that this combination has to do with the frequency of cardiac affections in the higher walks of life. We emphasize the professions for they include the doctor, the lawyer, the banker, the teacher; all of the men in the higher walks of life seem predisposed to cardiac thrombosis, independent of syphilitic taint.

The pathology of angina pectoris is not definitely understood nor definitely known inasmuch as we can take a hundred cases and cannot say that the pathology is going to be so and so. There are cases which come to autopsy because of other terminal causes and there we may find a good deal of pathology in the aorta or coronary artery, so we do not know definitely the exact pathology; therefore, we may only surmise and suggest that there is no permanent pathology in angina pectoris but state that it is a functional disturbance that seems to run true to rule because angina pectoris is angina pectoris whether or not we find definite pathology at autopsy.

Angina pectoris means a breast spasm; it is a terrible spasm, it comes on suddenly and gives the fear of death. It is brief, it is transitory, it recurs. There is not much change in blood pressure. The first attack may be the only one; on the other hand, it may return many, many times, may recur at very frequent intervals or may be long spread out over years but its making is still there.

The therapeutic test in angina pectoris is the administration of nitroglycerin. Angina pectoris will respond to the therapeutic treatment of nitroglycerin. We mention nitroglycerin to represent the group of nitrites. If you prescribe an ampule of amyl nitrite and instruct the patient or the nurse to crush it in gauze or a handkerchief, the patient will inhale the fumes and derive benefit, but if in a hospital or home the vapor or the odor, the physiological action of the amyl nitrite will affect the others in the house and sometimes cause a headache. The odor is unpleasant. Nitroglycerin is the drug of choice, therefore. Why? Because a tablet of nitroglycerin is accessible, easily carried, and is always fairly constant in its strength and can be used very easily. One who has had angina pectoris should always carry nitroglycerin. He should be supplied with a small vial, with cotton in the base and cotton on top, with only a few tablets at a time, so as to preserve their strength. When the patient feels the imminence of an attack or gives the history of developing an attack after certain exertion, he should take the nitroglycerin before the attack develops.

Now in the administration of nitroglycerin. A tablet placed under the tongue and crushed by moving the tongue to and fro in the mouth will very easily dissolve this very soluble nitroglycerin tablet. The nerve stimulation from the anterior portion of the tongue is carried quickly to the medulla, reflex action is soon established and the spasm is quickly relieved. Try this on a patient or if you want to dabble in physiological study, try it on yourself by taking a small dose; it won't hurt you to take a tablet, 1-200 grain, put it under the tongue and with your eye on your watch see how soon you get the response.

This is the thing we ought to do in providing for the patient who has had one attack and who lives day by day and day after day in fear of that which we know will recur, ready to strike him sooner or later. One of my old students lived for four years with that grim future before him, knowing that inevitably it was going to occur. For four years he kissed his wife and four children goodby every morning and finally the end came. He sat in his office downtown one night; he leaned his head over; the phone rang and wasn't answered; the lady looked in and he was gone; but he played that game with death for four years. To my mind he is as one of our great noble brethren whom we delight to call "Knight Unafraid." We all have to face death, but this man's life was an inspiration to me and I bear him in tender reverence.

Now as to nitroglycerin: the patient just as soon as he feels an attack is imminent should immediately have recourse to the tablet, grain 1-100, put under his tongue and repeat every ten minutes. Some patients will tell us if they walk after meals or when the wind is strong they will get an attack of angina. Those people can anticipate and ward off or ameliorate an attack by putting a tablet under the tongue before they go out. Of course, the better way is to wait longer after meals or to not walk in the wind. These patients soon become accustomed to this technique and it is second nature to them. Every time a patient of this type comes to my office he is put through a drill: "Tablet?" He puts his finger in his pocket and produces a vial; if he does not, he gets the same salutation as a medical student without his stethoscope.

Angina spasms are brief, transitory, they disappear and reappear irregularly. That is the history of angina. The blood pressure is not altered, the pulse is not accelerated.

Today we are raising our medical students on predigested stuff; a boy must have an education—high school, college, premedic — but we all try to keep him away from contact with the real people he is going to meet later on; we prevent his development of appreciation of human nature by giving him predigested stuff all the time. We feel that medical students of today suffer by lack of contact with the old preceptor. I think I am talking to some gentlemen in this meeting tonight who had to do with the making of young men of today who are proud monuments to the preceptorial system of twenty years ago. Many students and interns lack in appreciation of advice given by their elders, but let them get out and practice a little while and when they want help will be glad to send for that old fellow. An old teacher, Morley, used to teach obstetrics, at Jefferson Medical College — Morley would say, "All right, gentlemen, you may go to sleep and not pay any attention; it is all right. A few years hence you will be out on the plains of Iowa and you will have a woman in some terrible complication of obstetrics and then you will pray to God, 'Oh, how I wish Morley was here!', but Morley will be in heaven and you ought to be in hell." I enjoyed Morley.

CORONARY THROMBOSIS

Of coronary thrombosis we have learned much in the past few years. Herrick, of Chicago, has done some fine work along this line; Libman, of New York, MacKenzie, White and your own Crummer, have all made valuable contributions.

What are some of the conditions? Again the picture, a middle aged male, overweight, a good feeder, not much on exercise, good fellowship, a party, late hours, rotten ventilation, smoking and the like. He is not put on bread and water — I believe that is a fashionable diet out here—then he goes home in a taxi or rings for the car—no exercise, usually smokes in the sedan, doesn't even have the open car anymore, smokes in there and breathes that vitiated atmosphere. He goes to bed with little or no ventilation in his room. In an hour or so the folks are awakened because the man is taken with a serious pain, he has indulged heavily in protein foods, topped off with carbohydrates. That is the trouble and one of the things I want to put over to you tonight, is to do not make a diagnosis of acute indigestion until or unless you know your business. Acute indigestion, so-called, occurring in a man of middle age with the setting given you is not acute indigestion, it is something more. What are some of those symptoms? They are about as follows: A terribly full feeling in the epigastrium, eructation of gas, frequently of unpleasant odor, and with a desire to vomit. Sometimes vomiting relieves the patient. Constipation that had been present is more pronounced, the patient relieving himself by passing flatus. Likewise he evidences some relief from pressure after an enema empties the lower bowel or some relief of pressure by washing out the stomach but still has the appearance of acute indigestion. This man is taken with what you will recognize as being a more severe symptom-complex than in an ordinary case of indigestion.

A person ill from faulty diet, from tainted food or what not, will be miserable; he will have distress, will drink water frequently but is always able to help himself. Usually, after taking salts or an enema he will in the course of a few hours be able to walk around, though he should rest.

But what is the background here? The man has a background which you at once recognize as shock or collapse. What is the picture? This man, with symptoms of so-called acute indigestion is pale and cold, bathed in clammy sweat, very restless, has an agonizing pain coming down to the breast bone, a terrible facial expression of pain, there is fullness of the epigastrium and later there may be entire distention of the upper abdomen. That man is in shock; that man is in collapse—you can use the terms interchangeably.

The picture, therefore, is entirely different from that of an attack of acute indigestion, and here is where we sometimes make mistakes, I regret to state. We make the mistake of thinking it is only acute indigestion, or the family may make a mistake. They may get aromatic ammonia or soda or digestive tablets or give an enema or simple treatments for the relief of acute indigestion, but all the time he has terrible pain. This pain persists regardless of whatever else is done so far as ordinary remedial measures which should have furnished relief if it were only an acute indigestion. The pain persists, the family sends for the doctor, and the doctor asks for counsel, gets a surgeon and the surgeon thinks it is gall-bladder infection or he may think of acute pancreatitis. In any event it is suspected as being some acute abdominal affection and the man is opened. They find nothing at all or they may find gall-bladder disease with stones, and attempt may be made to remove the gall-bladder. The operation is a success but the patient dies of acute indigestion. I can illustrate by a case:

A patient 74 years old, in apparent good health; subject to chronic indigestion that accompanies gall-bladder infection; had been shopping one day and went home in a closed car. As soon as she got in the house she was taken with so-called acute indigestion. It was different from previous indigestion attacks she had had accompanying gall-bladder colic and was so recognized by her physician. That woman persistently for four days resisted all efforts at relief that had previously succeeded in quickly relieving her. She declined operation. At the end of the fourth day she died and the doctor asked for an autopsy. He was suspicious. The gall-bladder was the best illustration of a calcareous gall-bladder I have ever seen. The shape of it was like a gourd. Above, in the cystic duct, was one stone. The doctor presented this specimen and I asked "How about the heart?" He reached back and pulled out a coronary thrombus two inches long. The woman had gall-bladder trouble, true, she had so-called indigestion, true, but she had a different symptom complex — that is why he wanted an autopsy to get the coronary thrombus that he knew was there.

I have in my office many newspaper clippings which I have pasted on sheets—Dr. A. died of acute indigestion—scores of doctors and business men—but is was not acute indigestion, the condition was coronary thrombosis.

What is the clinical picture? Temperature is quite subnormal, the patient very cold and clammy, the pulse is always much changed from that which had been the patient's previous condition. It may be very rapid, it may be very slow, it is always irregular with regard to time and to force and usually the blood pressure shows a sharp drop. The importance of the blood pressure reading should be emphasized and followed closely in these cases of coronary thrombosis, taking blood pressure readings from day to day. If the blood pressure rises then the patient is winning his battle with the thrombus that leaves an infarct but if the blood pressure remains very low and if the temperature remains subnormal we have the same picture of collapse as the surgeon sees in post-operative cases when his patient is in collapse. He watches the pulse! If the plood pressure rises he feels the man is battling on the favorable side, but if low blood pressure persists and the pulse rate does not change he knows the prognosis is fatal. The leucocyte count increases within an hour or so after collapse comes on and it is this leucocytosis that causes frequent surgical mistakes. If the patient is taken with that train of symptoms the surgeon thinks he is dealing with an acute abdominal condition, orders him to the hospital and finds a leucocyte count of twenty to twenty-five thousand. He opens the abdomen and fails to locate pathology below the diaphragm.

Mistakes occur in acute cardiac tragedies in just the same frequency perhaps as formerly occurred before we understood the reflexes between the 10th, 11th and 12th dorsal nerves and the right iliac fossa. Many patients suggest acute appendicitis but in reality have pneumonia.

The mistake of operating for acute indigestion still is being made by surgeons and they should heed the warning to stop, look and listen, and get their physical signs complete before resorting to operation.

An infarct so far as physiology is concerned, no matter where it develops—after the block has taken place, after the collateral circulation is established if it can be established—requires at least two weeks after the onset for healing to take place. At autopsy these infarcts are quite readily recognizable and pathologists are now paying more attention to this phase of cardiac study than they did. This gives a clue to how long we must keep the patient under absolute fixation of body and mind, in bed at absolute rest until nature works her regeneration, then returning only cautiously and slowly to permitting any activity at all.

The treatment of acute coronary thrombosis is morphine, morphine, morphine and morphine repeatedly until you get results. The ordinary dose of a quarter grain of morphine should be tried first but if you do not secure remission and the patient does not overcome his shock then repetition of a quarter grain more, with atropin, so as to control the leaking circulation that is present. Morphine in sufficient doses must be used to control the pain. The terrific pain and the mental anguish are enough to kill the patient so he must have this drug in sufficient dosage and immediately. Do not waste time on sodium bicarbonate, aromatic ammonia and the like, but treat the patient at once with warm applications to the body and mustard plasters locally for counter-irritation. We have in recent years noticed the benefit that comes from leeching and cupping over the precordium in cardiac thrombosis. This may also be used in pericarditis that accompanies pneumonia. We have found that some patients responded very rapidly to the use of leeches, two on each side of the sternum. The patient must not be allowed to make any mental effort but is put at absolute rest. Wait on him hand and foot, even to fingers, don't let him move, for death frequently does occur because of tremendous lowering of the blood pressure with cerebral anemia and syncope. If tympanites persists give him a hypodermic injection of 1 cc. pituitrin of obsterical strength, then pass the rectal tube, if the patient can respond. Therapeutic response by a patient to any treatment always presupposes the ability of the patient to respond. If the patient does not have the inherent force in him to respond to any stimulus then he is not going to respond and he is going to die, so in these cases if the patient can respond he will show improvement.

The man or woman who has suffered cardiac infarct or thrombosis has suffered a permanent injury. He may recover from the urgency of the attack and we occasionally do find instances where the patient has recovered but most of them die and even when they do recover they are handicapped for life.

If the patient had had previous cardiac disease and persistent toxemia the myocardium will have suffered destruction of at least some muscle fibers. If he has nothing to build on for recovery then the downward course will be progressive and steady, covering weeks or months. If, however, he has fair integrity of muscle power then life may be prolonged indefinitely.

I saw a patient on Labor Day, a year ago, sixteen hours after an attack. He was still having the pain and was still in collapse, but the readings showed a little increase in blood pressure. He recovered after being in collapse 24 hours, but he died 11 months after from gradual cardiac weakening and dropsy.

MYOCARDIAL DILATATION

Now, we desire to talk about dilatation of the heart. We still grant that in some cases of death the heart stops in systole but the heart stops in diastole in the majority of cases of myocardial dilatation. Here we are dealing with some factor entering into the case that causes dilatation of the myocardium as a muscle. The normal heart does not undergo complete dilatation without having power to come back; the degenerated heart has a greater tendency to dilate without greater power to contract. The best instance I can cite here is that of mitral regurgitation wherein the heart dilates as the ventricle fails. When the young heart has power to be restored to compensation under rest and digitalis it will react to treatment and compensation will be reestablished. You will recall instances where the patient had mitral decompensation, then restored; a second failure, perhaps responding not so quickly or so roundly or so fully and this cycle repeated three or four times. There are records of even five decompensations and yet compensation can always be restored just so long as the heart muscle retains its power to take on further hypertrophy.

Acute myocardial dilatation is the thought I have in mind just now. There are certain conditions that favor acute myocardial dilatation, one of them being the strain on the right ventricle in lobar pneumonia; another hypertrophy of the heart in mitral disease and in chronic interstitial nephritis.

Again the picture recurs, men or women of 60 or 65 years of age, taken with a sudden attack. There is fullness of the chest, there is a cough, there is restlessness, there is orthopnea and soon the appearance of a frothy salmon-pink expectoration. This is a case of acute myocardial dilatation. It occurs frequently in those who had been subjects of chronic arterial hypertension, as in Bright's disease. An acute attack may be induced by running for a car, walking against a heavy wind, changing automobile tires, running lawn mowers, and the like, some extra muscular strain when they undergo this physical exertion and through vasomotor paresis diastole is exaggerated. Again because of sympathetic nerve depression they suffer from shock but this is not so terrible as in cardiac thrombosis. These people will again respond to that which must be given, morphine, tempered with atropine, so as to dry up the lungs by reason of venous stasis. Digitalis in full dosage is indicated, starting with one large dose in order to get the patient under its effects as soon as you can. Needless to say he is in bed. Here again patients will respond if they have enough muscle power left to regenerate and work upon. If they do not possess that power they will stay in collapse and die of pulmonary edema.

The patient with coronary thrombosis does not have pulmonary edema. It appears later on, after the heart weakens. He does not have the great pulmonary edema such as occurs in acute myocardial dilatation. He is dead before that takes place.

One of the students has kindly come over tonight so I may outline on him some of the points I desire to stress.

Angina pectoris is usually distributed over the arch of the aorta and here (indicating on the student's chest) is where your patient will tell you his pain is in angina, chiefly in this area here (indicating) gripping as in a vice, sometimes extending to the left, sometimes to the right, but they are always free down here (ensiform) — that is angina pectoris, and responds to nitroglycerin.

Then here, down to the ensiform, not in the gall-bladder, not in the pancreas, but the pain in here (near ensiform), that agonizing pain the patient has is terrible and is due to ischemia. Some of you have seen cases of gangrene of the leg resulting from the breaking off of an atheromatous plaque that lodged in the tibial artery and you will remember the terrible cry of the patient from the awful pain. The patient has this terrible pain because of ischemia. Nature requires blood for perfect maintenance of all our functions; when the blood supply is suddenly shut off the nerves cry out; the cry is terrible and it is imperative. That is why the patient has pain in infarct. It is not the pain of a gall-bladder colic, it is not the pain of a perforating ulcer, nor pain of acute renal twist, but it is the pain here (at ensiform) the pain, the pain, the pain, and when you go back in your memories to some of those cases you have had your ears will ring with the memory of what you heard, therefore, I want you to recognize the fact that it is not acute indigestion but is acute cardiac thrombosis and the patient needs help at once.

In acute cardiac dilatation the heart is in the left nipple line, the right border just a little to the right of the sternum. If hypertrophied to start with, the left border may be out to the left anterior axillary line. Because of the pressure on the serous membrane and distention of the cardiac capsule the pain will locate itself near the outer border of the heart. This is a sore pain from pressure, a bruised pain, a stretching pain and he will complain of a heaviness here (indicating). If of the right ventricle he will have pain here (indicating) but that again is a diffused pain, on either side of the sternum, not the sharp, agonizing pain that belongs to cardiac thrombosis.

That is my message. It is easy to discriminate, easy to treat if your diagnosis is correct: This (upper sterum) nitroglycerin; this (ensiform) morphine, q. s.; q. s. This (lateral sides of heart) for morphine and digitalis. The further prognosis is dependent upon the amount of regeneration that the patient possesses. Nitroglycerin in order to maintain the equality of the peripheral tonus, digitalis in order to control the myocardial leakage.

HAVE YOU TRAVELED MUCH DR. F.?

"I have seen shamrocks in Dublin, and bull rings in Spain; I stood before Galileo's pendulum in Pisa, and the Doge's palace in Venice; I have seen the Pope in Rome, and I crossed the Rubicon with the shade of Caesar. I have eaten roast beef in London, potatoes in Ireland, frog's legs in Paris, sausage in Bologna, spaghetti in Naples, Edam cheese in Amsterdam, baked beans in Boston, clams in Rhode Island, scrapple in Philadelphia, lobster Newberg at Delmonico's, and hot dog at Coney Island."

Hippocrates was the first to understand and appreciate fully the responsibilities of the practice of surgery. When he is spoken of as the Father of Medicine it would not be amiss to add of Surgery also, for he well realized the powerful influence which surgery must exert upon the practice of medicine. The works of the physician had no praise from him for he did not practice a divorcement of hands from brain. Indeed, in the light of modern discernment he was the ideal surgeon, a student, an observer, a deductor, a judge and a careful and experienced practitioner.—Dr. John B. Deaver (*Atlantic Med. Jour.*).

THE CARE OF PROSTATIC HYPERTROPHY, FROM THE PHYSICIAN'S STANDPOINT

EDWIN DAVIS, M. D.,
Omaha, Nebraska.

Each one of us almost daily has to deal with the problem of the care of the patient with prostatic enlargement. This applies to the physician, the surgeon and the urologist alike, but more particularly to the first of these, the physician, because it is his duty to recognize this condition, to properly advise the patient, to handle emergencies as they arise, and often to carry out treatments over long periods of time in cases where permanent operative relief is inadvisable, or has been refused, or postponed. The physician is, therefore, interested in symptoms and diagnosis, and in measures intended for temporary relief, and for the prevention of complications; particularly uraemia and sepsis. He is also interested in operative indications and contra-indications, and in operative results, with particular reference to mortality. I shall, therefore, briefly consider the essential points with respect to symptoms, diagnosis, palliative treatment, operative indications and contra-indications and operative results.

SYMPTOMS

The most important one symptom is frequent urination, particularly by night. The typical case will present varying degrees of urinary difficulty, characterized by hesitancy, straining, small stream and terminal dribbling, with or without intermittent attacks of complete urinary retention. In the atypical case, the patient may be comparatively free from symptoms between attacks of retention. The condition which is most likely to lead us into error is the so-called "overflow" bladder, with chronic urinary retention and tremendous distention, resulting in the frequent passage of small amounts of urine. In the extreme case of "overflow" bladder there may be an apparent incontinence, tending to cause both patient and physician to overlook the distended bladder. There may or may not be pus in the urine. Occasionally there may be profuse hematuria, more frequently with benign hypertrophy than with carcinoma. It is ordinarily the case that the patient gives a history of the symptoms of prostatic obstruction having dated back over a period of years, with remissions and exacerbations, the latter often being associated with exposure to cold or wet.

The above paragraph lists only those symptoms which result directly from mechanical obstruction. Contrasted with these are the uraemic symptoms, gradually and insidiously developing as the result of residual urine with consequent impairment of renal function. These are less apparent and less easily diagnosed than the obstructive symptoms, but infinitely more important from the viewpoint of prognosis. Enumerated according to increasing severity, the more common uraemic symptoms are: Malaise, anorexia, nausea, loss of strength, decreased mental alertness, delirium and coma.

DIAGNOSIS

The measures available for diagnosis are abdominal palpation and percussion, rectal pa[illegible]tion, catheterization and cystoscopy. An enormous, chronically distended, bladder is frequently to be palpated in the lower abdomen, and is sometimes plainly visible, like a pregnancy. More frequently, a distended bladder may be made out by percussion. Rectal palpation is the one most important method of examination, but is not infallible, by reason of the frequent occurrence of intravesical hypertrophy, not palpable per rectum. The large hypertrophy, with its typical soft and elastic consistency, is, of course, unmistakable, but there is the borderline case, in which the question of enlargement comes to be a matter of opinion. Catheterization with a soft rubber catheter is of value as a diagnostic measure in eliminating stricture as the cause of obstructive symptoms, and in determining the presence of a residual urine. Cystoscopy is not essential for diagnosis in the clear-cut case, but is indispensable in the borderilne case presenting little or no enlargement per rectum. Under these conditions an intravesical enlargement of the median lobe or of the lateral lobes, or both, may be clearly viewed through the cystoscope, and the diagnosis thus established.

A consideration of the differential diagnosis of prostatic hypertrophy is relatively simple because there are comparatively few other conditions which commonly produce urinary obstructive symptoms.

These are:

1. Spinal lesion (lues).
2. Prostatic carcinoma.
3. Urethral stricture.
4. Bladder pathology (stone, tumor, etc.).
5. Contracture of the vesical orifice.

A spinal lesion (usually luetic), resulting in the so-called "cord bladder", with difficult and straining urination, and usually with a large residual urine and overflow incontinence, is often confused with prostatic obstruction, and is sometimes not so easily distinguished. This error may account for some of the poor functional results obtained after prostatectomy. The patient with bladder symptoms due to spinal lues is likely to have pupil or reflex changes. He not infrequently has the so-called paradoxical incontinence, that is, painless, chronic, urinary retention, associated with incontinence of the overflow type. Together with this, a relaxation or flabbiness of the sphincter ani is not uncommon. Cystoscopy may reveal a relaxation of the internal vesical sphincter; and so-called funnel bladder. Suspicions as to lues may then be confirmed by the Wassermann test, or by spinal puncture. To avoid confusion between true mechanical prostatic obstruction, and retained urine due to faulty enervation (usually tabes), we must, therefore, be constantly on our guard.

The other four conditions listed above are usually more easily distinguished. Prostatic carcinoma may be recognized per rectum by its typical "stony" hardness, and its irregular nodular surface in the advanced case. There is rarely any question. The presence of urethral stricture is easily determined by instrumentation. Intravesical conditions, such a stone, tumor or diverticulum, causing urinary difficulty, may be recognized through the cystoscope. The diagnosis of the one remaining commoner source of confusion the contracture of the vesical orifice or the so-called median bar, we arrive at by a process of exclusion, since this condition is neither to be seen nor felt. In other words, residual urine, in the absence of prostatic hypertrophy, carcinoma, stricture, cord lesion and bladder pathology, may ordinarily be considered to be due to a contracted vesical orifice.

In addition to the above listed obstructive lesions, there are other conditions which do not cause obstruction, but which do cause frequent urination, and which may cause confusion in diagnosis. Polyuria, whether from diabetes or nephritis, may suggest prostatic enlargement. Likewise, inflammatory conditions of the prostate or bladder may give rise to both frequent and painful urination, and must, therefore, be identified.

PALLIATIVE TREATMENT

Palliative treatment consists essentially of bladder drainage. Although surgery offers complete and permanent relief, with a very low mortality, by no means all patients with prostatic enlargement come to operation. There is a large percentage of borderline cases, in which the symptoms have not become sufficiently severe to justify operation. There are those whose physical condition (usually cardiac or renal) is such as to contra-indicate operation. And there are those who, through ignorance or prejudice or fear, refuse operation. The care of all of these falls upon the physician.

If we bear in mind the gradual and insidious renal damage which results from residual urine, it becomes clear that the one most essential item in non-operative treatment is thorough bladder drainage, at all times. This is, of course, usually accomplished by interval catheterization, by the physician, or by the patient himself. Long continued catheterization, however, becomes exceedingly irksome, with a consequent tendency on the part of both physician and patient to increase the intervals, and hence to fail to provide satisfactory drainage. Furthermore, in spite of the best of technique, with repeated catheterization, infection will eventually take place. The use of the retained or in-dwelling catheter (consisting of an ordinary soft rubber catheter fastened in with adhesive plaster) is often preferable, particularly to tide over temporary periods of retention. This, of course, likewise produces bladder and urethral infection, and, not infrequently, epididymitis. These inflammatory complications of long continued catheterization are in no way the fault of the physician, since such results are not to be avoided by the most scrupulous technique in the best of surroundings, and may be considered to be eventually inevitable.

The chief objection to catheterization, however, is that only too frenqulent this becomes impossible, owing to acute inflammation, or to stricture, or to tortuosity of the prostatic urethra; so that suprapubic drainage becomes imperative. For this purpose a stab or puncture with a trocar is to be condemned (excepting as an extreme emergency) because of the danger due to the wide individual variation in the level of peritoneal reflection above the symphysis. While it is quite true that the average patient will survive this procedure without complication, the occasional patient with a peritoneal fold reaching well down to the symphysis will receive a peritoneal puncture, with the inevitable consequences of urinary extravasation into the peritoneal cavity. I once knew a patient who told of having been isolated alone on a ranch and having been driven by necessity to perform a suprapubic stab upon himself with an awl — and lived to tell it. This, however, does not justify suprapubic puncture. The safe and sane procedure, and the only excusable procedure where any facilities at all are available, is exposure of the bladder through a small midline incision under local infiltration anaesthesia. This is comparatively simple and, by careful and thorougn injection, may be done literally painlessly.

OPERATIVE INDICATIONS

The advisability of operation is not determined by the size of the gland, nor by the age of the patient, but by the degree of obstruction produced. Upon this basis, the patients properly coming to operation may be divided into three groups:

1. Those with residual urine.
2. Those with recurrent attacks of urinary retention.
3. Those who are able to empty the bladder, but who suffer from frequent and difficult urination.

The necessity of relieving a residual urine is apparent to all who realize the danger and the insidiousness of gradually developing uraemia. As indicated above, the catheter method is satisfactory temporarily, but as a permanent measure is decidedly makeshift, to say nothing of the danger of infection and sepsis. Provided that the patient is in fairly good general condition, it may be truly said that the danger of having the operation is decidedly less than the danger of postponement. Operation is not so clearly indicated in those instances where the patient is merely subject to periodic attacks of retention at long intervals, yet it may be safely predicted that patients in this class will eventually develop residual urine, and increasing difficulty. Furthermore, these patients carry the risk of being "caught short" at any time. The time for safe intervention is before complications arise. In the third group, with frequet annd difficult urination, but with little or no residual urine, the chief indication is for the relief of symptoms, rather than because of impending danger from uraemia. These patients are not infrequently in poor general condition merely as the result of loss of sleep, through the necessity of frequently emptying the bladder at night. Although there may be remissions, with temporary relief from symptoms, it is to be remembered that the general tendency is toward gradually increasing difficulty.

OPERATIVE CONTRA-INDICATIONS

Certainly, age is, in itself, no contra-indication to prostatectomy. In the series of ninety-one consecutive perineal prostatectomies summarized below, there were forty-five above the age of seventy, and nine above eighty. All survived excepting one. In determining operability, our chief interest centers upon the renal and cardiac conditions, particularly the former. It is to be remembered that the renal condition (and consequently the general condition) may show a degree of improvement under bladder drainage and forced water that is little less than miraculous. The patient with a large residual urine of long duration may have gone so far as to have developed cerebral manifestations of uraemia, amounting to mental sluggishness, or delirium, or even coma, and yet "come back" sufficiently under proper drainage treatment to become a comparatively safe risk for prostatectomy. The patient, however, whose general condition does not improve, whose appetite does not pick up, whose temperature chart shows persistent irregular elevations, whose phenolsulphonephthalein output does not increase and whoes blood nitrogen content does not decrease, after a period of several weeks of continuous drainage, is *not* a suitable candidate for immediate prostatectomy. To teach this patient the use of the catheter, or to send him home with a suprapubic tube (for a few months, or permanently) is by far to be preferred than to invite disaster by an ill-advised operation. As is generally known the blood nitrogen test (of retention) and the phenolsulphonephthalein test (of excretion) are almost indispensable aids in determining operability. With these tests favorable, one may proceed with a reasonable degree of safety in spite of such danger signals as high blood pressure and myocardial changes, in the absence of decompensation, of course. Diabetics, with proper medical attention, may likewise go safely through. It is needless to add that those patients who are poor operative risks, or whose condition is such as to make it necessary to advise against operation, have become so, almost invariably, by reason of delay.

OPERATIVE RESULTS

With respect to operative results, we are, of course, interested primarily in mortality. With proper diagnosis and selection of cases, by *proper pre-operative preparation*, by the use of local (sacral) anaesthesia, and by proper operative technique, *with particular attention to hemostasis*, the mortality of prostatectomy may be reduced to almost *nil*. It is doubtless true that, of the various major surgical procedures commonly carried out, appendectomy and herniotomy are generally regarded as the most "innocent", as far as risk is concerned. The series of prostatectomies here summarized, consisting of ninety-one consecutive cases with one death, (a mortality of 1.1%), certainly permits favorable comparison with the mortality of appendectomy and herniotomy, although there are no available statistics concerning the latter two. In making this comparison it should be borne in mind that the operation of prostatectomy is almost invariably performed during the autumn of life, at a time when the body is developing the many imperfections to which old age is heir. It may, therefore, be safely said that the risk of prostatectomy may be made as slight as that of appendectomy. And certainly the risk of prostatectomy is *distinctly less* than the risk which the individual patient with a residual urine assumes in deciding *against* operation.

In considering operative results, factors other than mortality are to be taken into account; particularly, postoperative complications and functional results. The accompanying table indicates twelve cases of epididymitis, which is about the average percentage. This is often a trying and a discouraging complication, but not of serious consequence if suppuration be detected early, and drained. In the one case of operative rectal injury, the dreaded complication (urethro-rectal fistula) was prevented by converting the procedure into a two-stage suprapubic prostatectomy. The series includes one case of persistent perineal urinary fistula with a duration of one year, the patient stating that a few drops of urine escape from the fistula with each urination. In the remainder of the series the time of closure of the fistula averaged 19.5 days. There are three cases in which the control of urine is not entirely satisfactory, in that there is the escape of a few drops of urine through the uretha upon sudden coughing or undue exertion, particularly when the patient has been over-working. One of these patients has more difficulty than the other two, yet none of them may be considered to have a true incontinence, since all of them have intervals of complete dryness.

Excepting the above listed complications, the functional results, with respect to ease and normalcy of urination, have been uniformly good.

In conclusion, it should be emphasized that the chief essentials in the care of the patient with prostatic enlargement are the recognition and the elimination of residual urine, whether by interval catheterization, by the retained catheter, by suprapubic drainage, or by prostatectomy. Since this paper is necessarily limited in its scope, consideration of such important subjects as preoperative preparation and operative technique has been purposely omitted.

Finally, it is essential to mention that the above low mortality rate (1.1%) could not have been possible without the use of sacral anaesthesia. A second factor in reducing the mortality has been the use of a perineal, post-operative, hemostatic bag(1), which has practically eliminated the hemorrhage hazzard.

MORTALITY AND COMPLICATIONS OF PERINEAL PROSTATECTOMY UNDER SACRAL ANAESTHESIA

TABLE I.

Consecutive cases	91
Deaths	1
Average age	70
Above seventy	45
Above eighty	9
Epididymitis	12
Rectal injury	1
Urethro-rectal fistula	0
Persistent urinary fistula	1
Incontinence	0
Imperfect urinary control	3

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ANGIONEUROTIC EDEMA*

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In presenting this paper I shall correlate reports of investigators on this subject, giving the outstanding features in the following outline: definition, etiology, symptomatology and diagnosis, treatment, prognosis and pathology.

Definition: Angioneurotic edema, giant urticaria or Quincke's disease is a peculiar vasomotor disturbance, characterized by transient localized swellings more or less circumscribed, often periodic, in the skin, mucous or synovial membranes. In a typical case they develop suddenly, are pale and waxy, painless and accompanied by disturbances depending upon the site of the reaction. They are without evidence of inflammation.

It was first described by Milton of Edinburg forty-five years ago. He considered it a distinct skin condition which he named "giant urticaria." The term "Quincke's disease" or "Quincke's edema" appeared after that author, in 1882. He described the condition as "an acute circumscribed edema of the skin" which he regarded as a vascular neurosis capable of being clinically separated from all other forms of local edema.

Etiology: Dr. Charles R. Austin says: "Angioneurotic edema is a symptom and not a disease. It is a symptom in the same sense as jaundice and albuminuria". A very complete report on etiology is given by Austin. On the basis of his study he concludes that angioneurotic edema must be considered as a manifestation of at least several types of disorder and gives the following outline:

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1. Allergic or anaphylactoid.
2. Infectious.
3. Endocrine.
4. Thermic.
5. Metabolic.
6. Idiopathic.

Type 1 is called allergic since a specific sensitization can be demonstrated in these patients as follows:

a. By the development of the symptom complex when the protein or proteins to which the individual is sensitive are ingested.

b. By demonstration of a specific reaction when the particular protein is applied dermally or entradermally.

c. The abeyance of symptoms when the offending protein is withheld.

He reports a case of a patient whose suffering was due to the ingestion of ham. The condition was proved allergic, as evidenced by the idiosyncrasy to the food ingested, by local reaction when extracts of ham were injected into the skin, and abeyance of symptoms when the products of pig were abstained from.

He also reported four other cases, one of which was sensitive to white beans, one to fish, another to veal and a fourth to strawberries.

In support of the anaphylactic theory, Walker, in 1918 found 3 cases caused by timothy pollen, flaxseed and ragweed pollen respectively. McCafferty reports a case which gave positive reaction to some food substances when injected intradermally and negative to others.

Phillips(3) states that more recent investigation shows that angioneurotic edema is either a congenital hypersensitization (allergy) or else a tendency to become artificially sensitized to a foreign protein (anaphylaxis). This is probably an inherited characteristic of the cytoplasm. Angioneurotic edema, curiously enough, is often transmitted as a specific condition. This may explain to a certain degree the familial tendency which is known to have occurred in as many as three successive generations and being present in either sex. Phillips(3) also states that in some cases of allergic angioneurotic edema the symptoms are shown for some hours or days after the offending food is taken.

Type two is called the infectious group in Austin's(2) outline. It is called infectious on less secure grounds, but since there is a focus of infection and the removal of the infection leads to subsidence of sympotms, it is suggestive. However, this infectious group may be a sub-group of type one as this may be a sensitization to the parenterally introduced protein of the invading organism or to the interaction products formed as a result of infection and subsequent intoxication. Osler has reported cases as possibly coming from focal infection.

Turnbull(4) gives a report of two cases in which the cause is definitely traced to focal infection.

The first patient was a female aged sixty. She gave a history of frequent attacks of tonsillitis. Six years before she had had an attack in which there were marked swellings in the face, tongue, arms and legs. Since then the swellings have recurred with greater frequency. The attacks seemed to occur in series: One day the tongue was so swollen that speech was impossible; the next day the tongue was normal but a hand or foot was swollen, etc. Following the attack there would be no swelling from ten to twenty days, with three weeks as the longest period. Then the swellings appeared suddenly with a feeling of flushing or filling of the affected area, followed by itching. The swellings appeared and disappeared as rapidly as they came. The patient complained of dryness of the throat, with much dropping of mucous and a bad taste in the mouth. Dull headaches had been constant for several years.

The left antrum and ethmoidal sinuses were found to be the seat of a chronic suppurative process and the tonsils in bad condition. The patient was operated upon and four days after the operation the patient had the worst attack she had ever had. Four months afterward she reported that she had not had another attack.

His second case was a patient age fifty, who stated that she had been troubled with the symptoms for two years. The swellings occurred regularly once or twice a month. Examination revealed chronic antrum infection and diseased tonsils. The sinus was drained and the tonsils removed. During the next few months the attacks became milder and less frequent. The patient recovered and has been free of attacks for more than eighteen months.

Strouse(5) reported a case which in all probability was due to abscessed teeth.

Type three, the endocrine group — has been recognized by many. The association of other evidences of vasculo-motor neurosis and the occasional occurrence of angioneurotic edema in Graves' disease is well known. The appearance of this symptom at the time of menstruation, puberty and the menopause seems to indicate some disturbance of the ovarian secretion as a possible factor. The symptoms are often relieved by operation in hyperthyroidism and the administration of thyroid extract in hypothyroidism.

Dryland(6) states a difference in the edema of hyperthyroidism and hypothyroidism exists. The edema of hypothyroidism is the true angioneurotic edema and conforms with the definition as given in this paper. The edema of hyperthyroidism is covered with hot red skin and the effect of treatment is slow.

Dryland(6) describes a patient, a girl who did not begin to menstruate until eighteen years old, and then at irregular intervals. At this time she noticed her first swellings. She was a definite picture of hypothyroidism. Her family history is important. Her mother had been a victim of angioneurotic edema all her life. The mother's sister was similarly affected and died of acute nephritis at the age of 31. Dryland thinks this might have been an acute edema of the kidneys. This lady's aunt and brother also suffered with the same thing. She was put on ½ grain thyroid extract t. i. d. Immediate improvement was noticed.

He also describes another patient, age 42 years with practically the same symptoms. This patient was put on thyroid extract ½ grain t. i. d. and she improved immediately.

Austin(2) sums up the possible relation of the endocrines to angioneurotic edema as follows: "Inasmuch as there is a familial tendency to disfunction of these glands as well as to the development of angioneurotic edema it would be interesting to study cases of familial angioneurotic edema for evidence of endocrine disease with the idea of testing the hypothesis that the familial types of syndrome are of endocrine origin."

In Levy and Rothschild's book "Minor Thyroid Insufficiency" they state that the origin of the edema from the thyroid is justified from its characteristics as follows:

1—they are independent of cardiac, renal, or cachectic symptoms.
2—they co-exist with recognized symptoms of hypothyroidism.
3—they appear in the course of paroxysms of thyroid insufficiency.
4—they alternate with certain symptoms of that nature.
5—they are susceptible to cure with thyroid medication.

Type four, the thermic group. This includes those cases in which exposure to cold seems to be responsible for the attack. These cases are very rare and no explanation of their origin has been given.

Type four, the thermic group. This includes the etiology seems ot be a disorder of metabolism. Mills and Pepper as pointed out by Strouse(5) claim a nitrogen retention during the attack greater than in the free period; second, that the total acid excretion and ammonia excretion are normal; third, sodium chloride excretion was reduced preceding and increased after the attack; fourth, that a low sodium chloride intake had a beneficial effect upon their cases.

Strouse(5) also reported a case of a man age 35, who dated his trouble from eating strawberries. No cause of his trouble could be found until he stated that he ate an unusually large amount of salt. A Mosenthal test followed the normal curve in every way except that the excretion of sodium chloride was 16 grams on an intake of 13 grams. He was advised to cut down his chloride intake to 10 grams and he remained free from attacks. The etiology here must have been a disturbance of salt metabolism.

Type six, the idiopathic group. It is into this group that a large number of cases fall. As the name indicates, no cause can be found.

Therefore, in summing up the question of etiology we find that each individual with angioneurotic edema requires individual study and observation. Considerable work may have to be done before the cause can be determined. This is true bceause the etiology is not unitary.

Symptomatology and Diagnosis: Due to the overlapping of these two subjects I will present them together. As stated before, the symptoms depend upon the location of the swelling. The diagnosis may be easy of may be difficult. This also depends upon the location of the swelling.

When on the skin the chief symptom is a swelling which cames on quickly and usually without warning. The swelling reaches its maximum extent in from one-half to two hours. It may shade into the surrounding tissue or may be sharply defined. The color is usually whitened or waxy. The swelling is tense, not tender, does not pit on pressure and rarely shows any purpuric discoloration. The center of the swollen area may extend one-half inch above the surrounding skin. The swelling lasts from a few hours to a day or two and disappears as rapidly as it comes. The most usual locations are the face, lips, tongue, pharynx, genitals and extremities. The swelling may disappear from part of the body to appear in another without any symmetrical anatomical relation. The subjective sensations in the swollen region are a feeling of fullness, stiffness and in some cases burning and itching. If the skin is scratched urticarial weals will usually appear. With the above symptoms the diagnosis should be easy. When the swelling is located in the pharynx, larynx, stomach, intestines or brain, the diagnosis may be very difficult. If in the pharynx or larynx the swelling may be seen and the accompanying symptoms of dyspnoea and difficulty of deglutition are present.

Gastro-intestinal symptoms are very common and appear in one-half to one-third of the cases. The attack usually begins by distress in the epigastric region followed by nausea and gas distension. Cramps, vomiting and intense thirst ensue. The attack ends with profuse diarrhoea with watery stools.

I will give a detailed report of a case operated on at the Massachusetts General Hospital. This case was previously reported by Harrington⁽⁷⁾:

A girl, age 26, single, had been in the same hospital four times, twice in the surgical and twice in the medical services. The first symptoms which brought her in were strongly suggestive of gall-stones, but the subsequent story shows that the condition was undoubtedly that of abdominal crisis of angioneurotic edema.

From the personal history it was found that she had an attack of angioneurotic edema in her hands fifteen years ago. She had been having attacks ever since at decreasing intervals. The longest interval was three months. During the last few years the interval had never been less than two weeks. The swellings may appear on any part of the body. She often had attacks of abdominal pain which was not well defined, but tended to cross the lower half of the abdomen without radiating into the back or shoulders. Such attacks usually persisted for twenty-four hours and were marked by nausea, vomiting and headache. The vomitus was liquid and green, never bloody, and one or two quarts at a time. She had never been jaundiced, but constantly troubled with gas and distress after meals.

It was decided that an exploratory operation was justified because of the duration and severity of the abdominal symptoms. The patient was informed that no definite lesion might be found as no definite diagnosis had been made. She accepted the suggestion that an exploratory operation be done.

The stomach walls and each abdominal organ was carefully examined, but nothing explanatory could be discovered except the intestinal condition. There was a good amount of clear free fluid in the abdomen among the intestines and filling the pelvis. A mild peritonitis was at first suspected. There was no hemorrhage in the intestinal wall, but at a point within a short distance of the ileo-cecal valve a cylindrical enlargement of the ileum, two and one-half inches long was brought to light, which entirely surrounded the intestine, increasing the bowel circumference to twice its normal size. The swelling was evidently in the bowel wall, elastic to touch and did not pit on pressure. It can be easily understood how such an infiltration could derange persistaltic action of the intestine. The lower border of the stomach was about one-half inch below the umbilicus. The appendix was removed as it seemed somewhat thickened, but a laboratory diagnosis found it to be normal. The engorgement of the intestine and the free fluid in the abdomenal cavity were explained by violent peristalsis brought on by the effort to force down the lesion which was actually in the intestinal wall.

Osler⁽⁸⁾ says, "The possibility of mistaking a visceral crisis of angioneurotic edema for appendicitis or intusussception or obstruction of the bowel and handing the patient over to the surgeon for operation is by no means remote." He relates three cases which were operated on and says: "The practical lessons to be drawn from these cases in which laparotomy was performed are first, that with patients with colic greatest care should be taken to get a complete history, which may bring out previous attacks, either of the skin lesions or of intestinal crisis, and, second, to make a careful examination of the skin for angioneurotic edema, purpura or erythema."

Cameron⁽⁹⁾, Dryland⁽⁶⁾ and others, in presenting cases, mention that most of their patients complain of intestinal disturbances at times.

Strouse⁽⁵⁾ writes, "abdominal crisis of this disease may assimilate acute appendicitis or intusussception or may not be typical of any definite pathologic condition. In our cases the attacks occurred usually at night, more often in the early morning hours and, in the beginning, at least, kept one guessing as to the exact condition. Localized signs and symptoms might occur, fever and leucocytosis might be present and yet, usually there was something that did not quite fit the clinical picture of the suspected lesion. It happened that in several cases during the period of observation, an attack of urticaria or edema occurred and cleared up the diagnosis, or the information was obtained that the patient was susceptible to a skin disease. Several patients had been operated on without a diagnosis having been made and one patient had two exploratory operations before the diagnosis was made."

Osler⁽⁸⁾ describes a case of angioneurotic edema with visceral lesions. It is noted that this patient has recurrent and transient attacks of hemiplegia which he attributes to edema of the brain substance. Other authors have mentioned coma and convulsions in connection with the edema.

These reports are sufficient to show the difficulty that one may encounter in making a diagnosis and the necessity of a complete history and examination before a diagnosis is made.

Treatment: No specific treatment is known for this symptom. Treat the cause if it is possible to find one.

Menninger(10) states that many cases show improvement under hygienic treatment such as, careful living regime, regulation of sleep, eating, elimination, exercise and sex life.

Osler believed that diet was not as a rule, important, although many writers believe it is a factor and should receive careful consideration.

Jelliffe and White state that treatment regarding diet is purely empirical. One should not eat any of those things which experience has shown to be hazardous.

It seems possible that there should be some means of desensitization treatment, but no report on this treatment could be found.

As to drugs, none insure relief. Calcium lactate. gr. xv, t. i. d., has been widely used on the supposition that the blood vessels need bracing up to prevent transudation through the walls and the transudates are thought to be conditioned by a diminution of the calcium content of the plasma. Osler menitons this drug as some possible assistance. He also recommends nitroglycerine.

Thyroid extract has proven beneficial to some authors. Dryland(6) and Phillips(3) recommend this treatment in cases of hypothyroidism.

Atropin is sometimes useful during the attack. and spraying with adrenalin may be of some use. The injection of v to xv minims of adrenalin has given some good results.

In abdominal crisis morphine may sometimes be necessary for relief of pain.

If the edema involves the pharynx or larynx to any great degree. intubation may have to be done.

Prognosis: It is only dangerous to life when it involves the pharynx or larynx. There is a tendency for the attacks to cease in advanced years, but this may not be the case. If a cause can be found, the prognosis is much better.

Pathology: According to Ehrmann(11): "The lymph vessels are widened. The fine capillary stippling of the connective tissue disappears. The tiny vessels of the superficial plexus are contracted, and those of the lower plexus widened and filled with blood. It is an anaphylactic reaction acting on the sympathetic innervation of the terminal vascular system causing localized edemic spots."

Heidenhain(12) believes it is an excessive lymph secretion due to morbid influences.

No other investigations as to the pathology of this condition could be found. due to the difficulty in obtaining the speciment for laboratory work.

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THE SERUM TREATMENT OF MENINGOCOCCIC MENINGITIS BY COMBINED CISTERN AND LUMBAR INJECTIONS*

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The specific serum therapy of epidemic cerebrospinal fever has seemed a myth to some practitioners, largely because results have not been seen in isolated cases of meningitis coming under their observation. The accepted treatment of meningococcic meningitis with antimeningococcus serum intraspinally and intravenously has only given results in very early cases. In late cases. the mortality and morbidity has been high and grave organic nervous residuals such as hydrocephalus and paraplegia almost always occurred.

The method of cisterna magna injection originated by Ayer(1) offers a new hope in desperate cases. He has shown that lumbar injections of ink barely reaches the base of the brain, while ink introduced into the basilar cistern stains the entire cerebral and spinal subarachnoid space. Frequently, a spinal subarachnoid block is present in meningitis and discouraging therapeutic results occur. Meningococcic meningitis is primarily a bacteremia but with electivity for the brain and spinal cord. The cisterna magna is the most favorable point of attack where the injection of serum near the site of disease is possible.

Reports of cases treated by cisternal injections of serum have shown a higher percentage of recoveries in severe cases. Ayer(2), Mitchell and Reilly(3), HcLean and Caffey(4), Peet 5), and Ebaugh(6) have reported cases. McLean and Caffey report eight recoveries out of eleven patients in whom the serum was injected into the ventricles and cisterna magna because of advanced disease or obstruction of the subarachnoid space. Ebaugh had five recoveries in eight cases of advanced meningitis. He prefers the alternate intracistern and lumbar injections, believing that the alternated method tends to prevent subarachnoid block. McLean and Caffey in a series of 45 infant cases found deaths and sequelae occurred in 39 per cent of cases not treated during the first week, as compared with 23 per cent deaths and sequelae treated in the first week of the disease by intracisternal and intraventricular injections.

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*Given in case report and discussion before the Douglas County Medical Society. Oct. 12, 1926.

We are reporting two recent sporadic cases of meningococcic meningitis well advanced in the disease treated by the combined cisterna and lumbar injections of serum, one case with definite response to therapy but death from an associated generalized miliary tuberculosis and a spinal subarachnoid block from the pyogenic meningitis, and one case with complete recovery.

Case No. 1. Mrs. V. P. married, 38 years of age, was referred by Dr. A. M. Pedersen of Ruskin, Nebraska, June 22, 1926. In the family history, a tendeny to tuberculosis was present. The patient had been in good health until the birth of her last child on April 16, 1926. Following delivery, the patient never fully regained strength, but remained in bed most of the time and for several weeks had an offensive vaginal discharge. About June 15, following a sore throat, the patient began to complain of insomnia and pain in the neck along the spinal column and in all extremities. When first seen by Dr. Pedersen after several days illness, urinary retention and high fever was found. About June 20, blurred vision developed.

When examined at the hospital on June 22, the patient appeared very toxic, soon became delirious and lethargic. The general examination was negative except for a functional systolic mitral blow and hurried cardiac action of a toxic heart. Pelvic examination revealed diffuse tenderness, but no demonstrable pathology. The tonsillar spaces were hyperemic. Neurologic examination revealed the following findings: nystagmoid movements, partial right facial palsy, neck rigidity, tremor of hands, uniform weakness of all the extremity muscle groups, fairly uniform hyperesthesia and marked nerve trunk tenderness. The tendon reflexes were sluggish. Bilateral Kernig's extensor sign and slight blurring of the nasal margins of both optic disks were present. There was a leucocytosis of 20,600 with 93 per cent polymorphonucleosis. The urine contained albumin and pus cells. The spinal fluid was under 30 mm of mercury pressure, was cloudy and showed 780 polymorphonuclear cells per c mm. Direct smears showed many intracellular diplococci that took a gram positive stain. A diagnosis of pyogenic meningitis, probably meningoccoccic,seemed definite in spite of the gram positive organisms in the smears. Dr. W. O. Bridges in consultation concurred in the diagnosis. Twenty-five cc of polyvalent antimeningoccic serum was given intraspinally the morning of the 23d, 15 cc of serum was given intraspinally and 15 cc intracisternally the afternoon of the same day. Following the serum injection, the spinal fluid cell count dropped to 570 in the spinal fluid and 240 in the cisternal fluid. The temperature dropped from 102.8 degrees to subnormal, as in pneumonic crisis; but the cardiac action was unimproved. The patient became more delirious and stuporous by the 24th, the blood pressure had gone up from 120 to 160 systolic, indicating increasing intracranial pressure, but the fundoscopic examination remained unchanged. Thirty cc of serum was given intravenously because of apparent impending death and a fear of an accident during another puncture. The patient expired shortly after the injection from medullary paralysis.

A necropsy done by Dr. A. J. Miller about six hours after death revealed the following gross and microscopic findings: Miliary tuberculosis of the lungs, liver, spleen, ilium, lymph nodes, meninges, brain and kidneys. Acute endometritis and acute suppurative meningitis, especially around the brain stem, over the pons and cerebellum. There apparently was a block due to fibrinous exudate around the foramina of the fourth ventricle. Only a few miliary tubercles were seen over the cerebellum and at the base of the brain. One solitary tubercle was found in the left occipital pole. Dr. Miller summarized his observations and conclusions as follows:

1. This case is unusual in that the diagnosis of miliary tuberculosis and meningococcic meningitis is made.

2. Practically all the tubercles are well advanced in the healing process, none are seen which appear to be advancing.

3. The purulent exudate in the meninges, however, is evidence of an active lesion.

4. Grossly, this exudate is typically meningococcic, although it is possible that such an inflammatory reaction is the result of tubercular infection and is an exacerbation.

5. However, since both organisms were demonstrated, it is most probable that this is not the case but that this patient had miliary tuberculosis which was quite generalized and, contrary to the rule, was healing, and that the patient died of an independent and different infection namely, meningococcic.

COMMENT

This patient had a well advanced meningitis in the second week of the disease when first seen. Apparently, the injection of serum intracisternally and intraspinally was effective as shown by the afebrile response and markedly diminished cell count in the spinal fluid after the serum injections. The necropsy revealed a missed diagnosis, namely generalized miliary tuberculosis. The occurrence of the two diseases together is unusual. Another observation is pertinent in that the laboratory examinations were confusing and the finding of the gram positive organisms might have lead one astray. In the presence of pyogenic meningitis, when in doubt, the administration of serum should never be withheld. The complication of a posterior chamber cerebrospinal block of the fourth ventricle foramina caused the death by medullary paralysis from rising pressure as indicated by the terminal rise in blood pressure.

Case No. 2. Mr. E. F., age 55, was first seen on July 25, 1926, on account of severe headache. The patient gave a negative past history except for spells of dizziness during the past month. Severe throbbing frontal headache had been present for three days and prevented the patient from sleeping. The headache increased in severity and was accompanied by soreness of the neck muscles upon moving the head.

The general physical and neurologic examination revealed the following: A well developed man suffering from severe head pain. Slight tenderness over the frontal bones and neck muscles with moderate cervical muscular rigidity was present. Manipulation of the head increased the headache. The left patellar and ankle jerks were absent. Slight Kernig rigidity was present. The peripheral arteries were very much thickened, hard and tortuous. The blood pressure was 110 systolic, 70 diastolic. The temperature upon admission was 95.6 degrees but rose to 101 degrees in three hours accompanied by a pulse rate of 84 and respirations of 26. The leucocyte count was 16,800, 84 per cent polymorphonuclears. The spinal fluid was under increased pressure, the first two cc being clear but the remaining uniformly bloody. The bloody fluid prevented a total proteid and cell count determination. A working diagnosis of hemorrhagic internal pachymeningitis of apoplectic origin seemed most probable at this time because of the generalized extensive arteriosclerosis, bloody spinal fluid and signs of meningeal irritation. This diagnosis was further strengthened by a four plus Wassermann reaction of the fluid. A pellicle formed in the fluid and a smear showed many pus cells, but no organisms. On July 27, a new spinal fluid examination still showed bloody fluid, pus cells but no organisms.

Vigorous antisyphilitic treatment was then given over a period of ten days with no improvement in the patient's condition. The headache persisted, the patient became more toxic, lethargic and had urinary retention. The meningeal signs persisted. The temperature ranged from 97 to 102 degrees and for a three day period was practically normal. On August 7 (two weeks after the onset), a new spinal fluid examination showed cloudy fluid under pressure and contained 3,600 cells with heavy globulin. The smear revealed an excess of polymorphonuclear leucocytes that contained many gram negative diplococci. A new Wassermann reaction and Lange gold curve were negative. 30 cc of polyvalent antimeningococcic serum was given at once intracisternally. This was followed by restlessness and muscular twitchings, but within 24 hours the temperature was normal and the headache was improved. The spinal fluid cell count dropped to 700 cells per cm and no organisms could be found at this time or any subsequent examination. The next day 30 cc of serum was given intraspinally, following this the patient's general condition was so much better that 32 hours were allowed to pass before giving the third injection. By this time, the temperature was 102 degrees and the patient delirious. 30 cc of serum was then given intraspinally, followed 14 hours later by 30 cc intraspinally, 24 hours later 30 cc cisternally and 24 hours later 30 cc more intraspinally. Following each of the intraspinal injections, root pains were so severe that morphine was necessary for relief. No reactions developed from intracistern injections. Three more injections were given at 24 hour periods intracisternally, intraspinally and intravenously for a total of 60 cc. By this time, the patient was afebrile but very weak. Dysphagia, Cheyne Stokes respirations with poor cardiac-action were present. A leucocyte count at this time was 27,600, with 85 per cent polymorphonuclears. The spinal fluid cell count at this time was 500 cells per cm of which 50 per cent were polymorphonuclears.

After a two day rest, the patient again developed fever of 101.8 degrees. At 24 hour intervals, two 15 cc injections of serum were given intravenously. The patient appeared stronger at this time and was practically symptom free; but in view of a finding of 450 cells per cm in the spinal fluid, a last intracisternal injection of 30 cc of serum was given. Outside of a mild serum rash, the remaining period of two weeks in the hospital was uneventful. A neurologic status before dismissal was entirely normal; the absent reflexes had reappeared. The patient lost about 30 pounds weight during the illness.

At a new examination Oct. 11, 1926, the patient's only complaints were moderate insomnia and at times spasmodic twitchings of the right hand and arm with paresthesias. This focal spasm suggested a cortical Jacksonian irritative phenomenon. The entire examination was negative, except for the marked atherosclerosis and slightly exaggerated tendon reflexes. The general condition was excellent.

COMMENT

There are several interesting facts in this case.

1. The occurrence of a sporadic case of meningococcic meningitis in a man of 55 years is unusual.

2. The onset of the disease was interesting in view of the isolated complaint of headache.

3. The diagnostic problem at first was a perplexing one. The syndrome of bloody spinal fluid, with meningeal irritation, a four plus Wassermann reaction in an arteriosclerotic individual suggested a diagnosis of basilar meningeal apoplexy.

4. The patient's condition grew worse under antisyphilitic treatment and suggested to us the probability of an incorrect diagnosis.

5. The new spinal fluid examination then told the true story. This illustrated the fallacy of relying upon a laboratory report implicitly and also illustrates how, occasionally, a false positive reaction may be given in other organic nervous diseases, yet a carefully controlled four plus positive should not be false.

6. This case was exceptional in that the disease was well advanced at least two weeks before specific therapy was started. The patient was a poor risk because of advanced years and extensive arteriosclerosis, but responded to intensive intraspinal and cisternal injections of serum.

7. Six intracisternal, six intraspinal, and three intravenous injections were given for a total of 270 cc of serum. This illustrates the necessity of persistent therapy and of giving sufficient dosage of serum to eradicate the infection.

8. The cisternal injections were of definitely greater value than the intraspinal, also they were tolerated better and preferred by the pa-

tient. Without cisternal injections, this patient would certainly have died.

9. We believe the alternating method of intraspinal and intracisternal injections as suggested by Ebaugh tends to prevent spinal block from the fibrinous exudate.

10. It has been conclusively shown that the cisterna magna is the logical point of attack for the most effectual treatment of these cases. We believe the average mortality of 30 per cent even with serum therapy could be cut to around 10 per cent by early, vigorous intracisternal and, where indicated intraventricular injections.

SUMMARY

Two sporadic cases of meningococcic meningitis treated by alternate intracisternal and intraspinal injections of antimeningococcic serum are reported. Both patients were in the second week of the disease. In one case a definite clinical and serologic improvement occurred from serum therapy; but complications of spinal subarachnoid block and associated generalized miliary tuberculosis resulted in death. In the other case, the patient being in an extremely critical condition, vigorous serum therapy resulted in recovery in a case where, ordinarily, a fatal issue would have resulted.

On the basis of these cases and recent results reported by others, a plea for early administration of serum using particularly the intracisternal route of injection is made in the hope of reducing the all too high present rate of mortality and morbidity. In well advanced cases where spinal subarachnoid block is present, the cisternal injections offer the only hope of cure.

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NEWER ASPECTS OF NUTRITION: THE PATHOLOGY OF MALNUTRITION

20. The Dietetic Treatment of Peptic Ulcer — Continued.

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INTRODUCTION

Whatever the cause of peptic ulcer it is well known that once formed it suffers corrosive and disintegrative action in contact with the acid of the gastric juice. The removal of the acid partly or completely through neutralization does away with the irritating and corrosive effect and may prevent the vertical or horizontal enlargement of the ulcer. To neutralize excessive acid we have liberal recourse to alkalies. Among the alkalies used clinically, we may mention sodium bicarbonate, calcium carbonate, magnesium oxide, and aluminum hydroxide.

We have reviewed in the last paper some of the objections to alkalies. These objections apply with great force to sodium bicarbonate, less to calcium carbonate and magnesium oxide, and least to colloidal aluminum hydroxide. Sodium bicarbonate is not only a local antacid, but also a systemic alkali. Owing to its systemic effect it may influence markedly the acid-base equilibrium in the blood and general metabolism through its sodium ions. Hardt and Rivers(9), and also Shattuck, Rohdenburg and Booher(26) claim that patients possessing a peptic ulcer and at the same time kidneys with impaired function should be given alkalies with considerable caution. In the amounts usually prescribed, such patients develop toxic symptoms easily, and show signs of further reduced kidney function.

GASTRIC ANTACIDS DEVOID OF SYSTEMIC ACTION

Several years ago, in 1923, Greenwald(27) reported his experiments with gastric antacids, compounds which have a local action, but which are devoid of systemic action. These antacids are the tertiary phosphates of calcium and magnesium, having the formulas $Ca_3(PO_4)_2$ and $Mg_3(PO_4)_2$ respectively. They are tasteless and neutral in reaction. The tertiary magnesium phosphate, according to Killian(28), neutralizes the same amount of hydrochloric acid as sodium bicarbonate, while the tertiary calcium salt neutralizes one-fourth as much as sodium bicarbonate. In view of the fact that the tertiary calcium and the tertiary magnesium phosphate are neutral in reaction, they have the ability to neutralize acid in the stomach without the possibility of ever rendering the contents alkaline. The tertiary calcium and magnesium compounds are excreted unchanged through the intestine and not through the urine.

In the same year that Greenwald reported his findings with reference to neutral antacids locally capable of neutralizing acid, Kantor(29) demonstrated the power of these salts to remove free acid from the gastric juice, and described effective attempts in controlling clinically the symptoms of peptic ulcer. The tertiary phosphates gave the same symptomatic relief as the alkalies commonly used. In the following year Shattuck, Rohdenburg and Booher(26) also reported the successful clinical application of the tertiary phosphates. They employed a mixture of equal parts of calcium and of magnesium phosphate. The components of the mixture balance one another. Thus, magnesium phosphate is slightly laxative, while the corresponding calcium salt is slightly constipating. Calcium phosphate completes its neutralization in about 15 minutes; magnesium phosphate, in two hours. The investigators found that they could substitute successfully in the Sippy diet the mixture of earthly phosphates for the commonly used combination of sodium bicarbonate, calcium carbonate, and magnesium oxide. They observed that 10 to 25 grains each of magnesium and calcium phosphate every hour sufficed to bring good clinical results. The average dose, however, was 15 grains. No toxic symptoms developed when the phosphates were increased to 40 grains of each every hour. In all cases the urine remained acid. In contrast to the results obtained by Hardt and Rivers with sodium bicarbonate, it must be pointed out that the pH and the carbon dioxide combining power of the plasma remained unchanged. Blood pressure and phenolsuphophthalein output showed no abnormalities. Urea, chloride, and inorganic phosphorus of the blood were not increased.

THE IDEAL DIETARY TREATMENT FOR PEPTIC ULCER

We have stated the conditions that must be fulfilled by an ideal dietary treatment for peptic ulcer. The food prescribed must protect the ulcer from injury. It must secure the maximum amount of secretory and motor rest. It must be favorable to recovery and healing. It must maintain the patient in nutritive equilibrium. With these conditions as criteria let us examine carefully some of the well known dietary procedures for peptic ulcer.

DUODENAL ALIMENTATION

In 1910 Einhorn(30) first published his method of alimentation by means of the duodenal tube. The details of the procedure, and the conditions in which the method is indicated were first given in the Medical Record for 1910. According to Einhorn, duodenal feeding is a simple method and should prove of great value in the treatment of gastric ulcer, for it offers complete motor rest for the stomach, thus affording opportunity for healing and for preventing further injury. The type of food sent through the tube can be made as completely balanced and adequate quantitatively and qualitatively as the science of nutrition could in its present stage of development hope to demand.

Garbat(31) has shown, however, that duodenal alimentation does not eliminate the secretion of gastric juice and consequently motor activity must get into play to remove this secretion. He proved that gastric secretion commences immediately during the process of duodenal feeding and continues as long as the food contents remain in the duodenum. The acid gastric secretion unbound by any food in the stomach can be highly irritating to the gastric mucosa, and can be readily productive of pylorospasm. These are just the very conditions we are attempting to obviate by duodenal feeding. By means of the two tube method, one tube in the stomach and the other in the duodenum, Garbat has shown that a reflow into the stomach of food introduced into the small intestine through the duodenal tube occurs more frequently than is usually believed. The condition may be the result of too rapid injection of food into the duodenum. It may be due to improper position of the duodenal tube, which may not always be recognized, or it may be due to the existence of a patent pylorus.

LENHARTZ DIET

The procedure of Lenhartz(32) has in its favor the fact that it does not entail the use of alkali. On the first day 200 c.c. of milk and two eggs are given. This allowance is increased gradually until at the end of the first week when the patient receive 900 c.c. of milk and 8 eggs. Sugar (20 grams) is added to the diet on the third day and is increased to a total of 50 grams by the ninth day. Scraped meat (35 grams) is added on the sixth day. It is increased to 70 grams on the day following. Rice is given on the seventh day, zwiebach on the eighth, and butter on the tenth. The diet begins with 208 calories a day, but the energy value of the diet rises to 2138 calories by the ninth day and to 3073 calories by the fourteenth day. On the ninth day the diet stands as follows: Protein 130 grams, fat 75 grams, carbohydrate 200 grams.

NUTRITIONAL ANALYSIS OF THE DIET

Starting with a low calorific value the Lenhartz diet very soon reaches adequacy from the standpoint of thermogenesis. After the sixth or seventh day it becomes adequate in calcium through the quantity of milk ingested. The diet fulfills the daily phosphorus requirement of 1.5 grams. The iron requirement of 15 milligrams per day is not satisfied. Milk is very poor in iron, since a whole liter of cow's milk is said to contain about 0.24 milligram. Beef contains about 4 milligrams per 100 grams. The seventy grams of scraped beef could only supply about 2.8 milligrams. The iron content of eggs is 3 milligrams per 100 grams of edible portion. Eight eggs weigh somewhat less than 300 milligrams. The eggs, roughly speaking, supply about 9 milligrams of iron. Perhaps if liver was used instead of scraped meat, together with some leguminous plant like beans, peas or lentils or food like spinach the iron requirement would be easily met.

The Lenhartz diet is one containing the fat-soluble vitamins. The anti-ophthalmia vitamin, fat-soluble A, is supplied in the milk, the egg yolk, and the butter. The anti-rickets vitamin, fat-soluble D, is found in considerable amounts in the same foods. The anti-sterility vitamin, fat-soluble E, is found in fair amounts in butter and eggs, and in minimal amounts in milk. Among the water-soluble vitamins, the diet may be said to contain the pellagra-preventing vitamin, known as dietary factor P-P, which is found in the fresh lean beef and in the eggs. The supply of the anti-beriberi vitamin, water-soluble B, is carried largely in the milk and to a smaller extent in the meat and eggs. The diet lacks the anti-scurvy vitamin, water-soluble C. A very small quantity is present in the eggs. The presence of this vitamin is disputed in meat. Fresh raw milk contains a variable amount of anti-scorbutic substance, but it is very doubtful that the milk in the raw condition ever gets to the patient.

On the whole, we may say that after the first week the Lenhartz diet differs not greatly from the average diet except in the selection of foods and in the excessive protein intake. Furthermore, the diet falls somewhat short of the ideal diet in iron and in the anti-scorbutic vitamin, water-soluble C. From the standpoint of the treatment of peptic ulcer, it must be said that the Lenhartz diet affords very little opportunity for motor and secretory rest for the stomach. The quantity of food is large and the content of protein is very high.

THE SIPPY DIET

The Sippy(33) diet is perhaps the one in most popular use. It calls at first for the administration of three ounces of milk and cream every hour from 7 a. m. to 7 p. m. Other foods, eggs, crackers, bread, cereals like rice, oatmeal, and farina are gradually added to the diet, and, still later, custards, creamed soups, vegetables, purees and other culinary preparations. By the end of the first week, the diet yields 1,800 calories, distributed among 65 grams of protein, 135 grams of fat, and 100 grams of carbohydrate. Every half hour midway between the feedings and even for four or five doses after the last feeding an alkali powder mixture is given consisting of 10 grains each of magnesium oxide and sodium bicarbonate. This mixture is alternated with a powder containing 10 grains of calcium carbonate.

The Sippy diet is poor in iron and in the water-soluble vitamins and lacks altogether the anti-scorbutic vitamin. The efficiency of the Sippy diet should be strengthened and could easily be strengthened by the addition of iron-containing foods and those rich in water-soluble C. From the standpoint of the special pathology involved, we claim that the frequent use of massive doses of alkali may be objectionable. Dr. G. B. Eusterman(34), of the Mayo Clinic, states that the Sippy treatment cannot be carried out indiscriminately. In hospitalized patients who tolerate alkalies poorly, he has recently discovered that from one-half to one-fourth the dose of alkali required in the usual Sippy procedure would bring relief to the patient, and that the usual or increased amounts of alkali would provoke the characteristic signs of alkali toxemia. Elderly patients especially, he states, with diseased liver or kidneys seem more liable to alkali intoxication. Looked at from another angle we cannot help emphasizing the fact that the Sippy dietary and alkali treatment is not conducive to healing, for gastric rest, motor or sensory, is out of the question in view of the fact that the stomach is kept in a state of constant activity for at least twelve out of every twenty-four hours.

SMITHIES' DIET

In accordance with his convictions and clinical experiences, Smithies(11) discarded the use of alkalies and developed a dietary procedure, calculated to give rest to the stomach. In order to obtain this rest he starts with a preliminary period during which no solid food and very little liquid food is given by mouth. For a period of three to seven days, depending upon the severity of the gastric distress, the patient during his waking hours is given one-half ounce of water every hour. One ounce of orange juice or grapefruit juice is occasionally given during the day. During the period of forced gastric rest, the nutritive requirements of the patients are partly satisfied by enemas given every four hours by the drop method, and consisting of 1 ounce of 50 per cent alcohol, 1 ounce of glucose and 240 c.c. of physiological saline. Since opium acts as an anti-peristaltic, the tincture of this drug is given for the first day with each enema in order to prevent expulsion of the administered fluid.

The second period is ushered in by oral feeding of soft foods. The number of enemas is reduced when feeding by mouth is begun, and they are discontinued on the fifth day thereafter. Gruels made of rice, wheat, oatmeal, sago, corn meal, etc., are fed by mouth in quantities of from four to six ounces. This type of feeding is continued for a week or two. From the fourteenth to the twenty-first day barley water, zwiebach, butter, milk, puddings and custards are introduced. Salisbury steak and eggs are finally added to the menu. An ounce of warm water or an ounce of orange or grapefruit juice is allowed throughout the treatment whenever desired by the patient. The dietary treatment according to the plan of Smithies lasts six to seven weeks.

THE DIETARY PROCEDURE OF WARREN COLEMAN

That the treatment of peptic ulcer does not require employment of alkali is evident from the fact that Smithies, Alvarez and Coleman are each successfully treating patients without its use. The success of the Sippy treatment is not to be attributed to the alkali given but to the type of food and to the enforced physical, mental, and emotional rest that goes with this treatment. Perhaps the most interesting and most comprehensive of the alkali-free methods of treating peptic ulcer is to be found in the one advocated by Warren Coleman(34), and used by him for a number of years with marked success.

We shall now outline the various steps in Coleman's procedure and see how he obtains gastric rest by controlling the type of foods with reference to their digestibility, their effect on gastric secretion, and their effect on gastric motility. The patient is put to bed to minimize the influence of exercise on gastric mobility, to lower his metabolism, and to assist in retaining the nutrient enemas, which form a part of the treatment. Before the treatment is begun, the alimentary tract is cleansed with castor oil or some other laxative.

For the first few days the stomach is given absolute rest. From three to five days, depending on the patient's ability to withstand partial starvation, no food is given by mouth. On the first day, nutrition is partially maintained by the administration of glucose enemas. The intake of glucose for this day is 30 grams. In addition to this, 300 c.c. of physiological saline is supplied in enema. Each morning before the first nutrient enema is administered, the rectum and sigmoid are emptied by an enema of soap suds or by an enema consisting of 0.7 per cent of sodium chloride. The glucose solution is given by the drip method at a rate that consumes one-half to three-fourths of an hour. Three to four such enemas are prescribed daily, equally spaced through the sixteen waking hours.

As for the concentration of glucose, it may be said that is well borne in ten per cent solution or more. When the patient experiences intolerance, as shown by painful intestinal cramps, it is advisable to reduce the number of enemas or to reduce the solution to 7 or 5 per cent. The glucose and saline enemas are continued throughout the treatment.

If thirst is not controlled by the enemas, small quantities of water (1 to 3 ounces) by mouth may be taken whenever desired. Small amounts of cracked ice by mouth are also permissible, provided that the water swallowed does not provoke pyloric spasm.

The olive oil, 1½ to 2½ ounces, or 45 to 75 c.c., may even be given on the first day. It is taken more easily when it is chilled. The whites of three or four eggs are whipped to a foam. As the treatment goes on, the quantity of oil is increased to a maximum of 150 c.c., and the white of eggs to a total of six or eight. When the olive oil begins to pall on the taste it may be replaced by some other fat, butter, unsalted or sweet, egg yolk or cream. It must be added that Coleman commits a dietary error when he makes up his fat requirement with olive oil and not with the more highly nutritious and digestible fats, such as butter, cream, or egg yolk. These are rich in fat-soluble vitamins. Egg yolk in addition is a very rich source of iron.

In the use of fats as food we must not overlook rancidity. Rancid fats are powerful excitants of gastric secretion. Traces of fatty acids are always found in rancid fats. Rancid butter for example, contains free butyric acid. Such butter or other rancid fat should be washed several times with water or, better still, with ¼ to ½ per cent sodium bicarbonate solution.

Food by mouth is given on the fourth to sixth day. The only foods allowed for ingestion is white of egg and olive oil or butter fat. The egg white and the fat are given at different intervals. The alternation has the advantage of preventing the delay that fat causes in the passages of protein from the stomach. The intervals should not be less than two hours. The total quantity of food should be increased as rapidly as the stomach can take care of the extra amount in order to control the loss in weight, which the meager diet entails. The total quantity given at any feeding should never exceed three ounces or 90 grams.

ANTI-SPASMODIC MEDICATION IN PEPTIC ULCER

In addition to rest and dietary measures, anti-spasmodic medication is at times necessary in certain individuals who possess a hypertonic vagus or whenever the ulcer is located near the pyloric orifice. The drugs of choice are atropine, tincture of belladonna, or bromides. Atropine may be given hypodermically or placed in the nutrient enema. When food is given by mouth 5 to 15 minims of tincture of belladonna may be taken before feeding.

All patients lose weight in the earlier part of the treatment because the amount of food is insufficient to cover the nutritive requirements. For this reason the quantity of food is increased rapidly as feeding by mouth begins. The loss in weight, however, is recovered before the patient is ready to leave his bed. If the loss is dangerously rapid, the diet can be fortified by the addition of cream and eggs. The loss in weight is greater if the thirst is not controlled.

It may be added that with the Coleman diet, which is not supplemented by alkali, gastric distress quickly subsides after treatment is begun. It may even disappear on the first day.

The Coleman diet is one which depends upon fat to furnish the greater portion of the energy of the diet. Coleman does not recognize the fact that the fats administered should be only the dairy fats, butter, cream, and eggs. These are more digestible and more nutritious than any other type of fat, cod liver oil excepted. Cod liver oil in small quantities is of undisputable value even in peptic ulcer. From the angle of treatment for peptic ulcer, it must be said that fats are not digested in the stomach. When taken with other foodstuffs they diminish or delay the gastric secretion. Since fats also leave the stomach slowly, they form a protective covering over the ulcer.

The Coleman diet is one low in protein. The white of egg is the protein used. Whites from six to eight eggs yield three to five grams of nitrogen. This is all the protein nitrogen furnished by the diet. The white of egg, given alone or with a small quantity of water or lightly boiled, does not excite gastric secretion. It is digested in the stomach only when gastric digestion has been initiated by some other food or by psychic impulse. White of egg passes quickly into the duodenum. The small amount of protein in the diet brings about minimal gastric secretion. In this respect the Coleman procedure has the advantage over the Sippy, Smithies, or Lenhartz treatment.

The carbohydrate in the diet is glucose administered per rectum. Glucose is readily absorbed from the large intestine. It is, however, found expedient to give no more than 90 to 100 grams a day. Sodium chloride is added to the glucose enemas to prevent loss of chlorine from the body. Eight grams of salt per day will prevent such loss.

The greater portion of the water required is given per rectum. Since water by mouth excites gastric secretion when given in large quantities, it should be taken through this channel only in small quantities. In order to secure complete rest for the stomach, only water by mouth is permitted for several days.

The Coleman procedure is the most practical and most scientific treatment yet devised for peptic ulcer. Every step is in direct line with modern physiology. The procedure, however, could be strengthened in efficiency, if it be made somewhat sounder from a nutritional standpoint. The Coleman diet is poor in iron and water-soluble vitamins. Iron could be increased in quantity by the more liberal use of egg yolk, spinach juice and soups made from the leguminous plants, peas, beans, lentils—from which the peas, beans and lentils themselves have been removed before eating. Water-solube vitamins can be readily obtained from fresh fruit or vegetable juices, chief among which may be orange juice, juice from crushed lettuce, or juice from raw cabbage. There is no danger from the use of fruit juice in peptic ulcer. Every fact in nutritional science points to their efficiency and, moreover, they have been employed with success in the treatment of gastric ulcer by such careful and scientific-minded clinician as Smithies.

The use of alkali in peptic ulcer is just now a debated question. The very interesting article by Dr. Sara M. Jordan(36) in the Journal of the American Medical Association of December 4, 1926 and the very interesting comment by Dr. Victor C. Myers(36) on her work shows that alkali treatment is a live but unsettled topic. In view of the uncertainty of alkali as a therapeutic agent and the growing tendency to lessen its use, it is gratifying to find that Warren Coleman has developed a dietary treatment requiring no supplementation with alkali. The practices and suggestions of Coleman are in harmony with such famous gastro-enterologists as Smithies and Alvarez.

We cannot pass the subject of peptic ulcer without mentioning the method devised by Alvarez(37) for the ambulant treatment of duodenal ulcer. The patient, who is presumably at work, is allowed three big meals a day. The food is chosen from a special diet list. The essential element in the treatment, however, is the food between the meals. Evidently excessive gastric acidity is removed not by neutralization with alkali but with the buffers in the food.

For the food between meals a liquid mixture is made up in the proportion of two eggs and half a pint of cream to a quart of milk. The amount of cream can be varied to suit the patient's need for calories. In case milk is not well tolerated, a thin gruel made from any cereal may be substituted. The patient takes to his place of work or business the milk mixture prepared as above, and also a box of crackers. Besides his three meals a day (breakfast at 7:00 a. m., lunch at 12:00 m., and dinner at 6:00 p. m.), he is instructed to drink a glassful of the milk mixture at 10:00 a. m., at 2:00 p. m., and at 4:00 p. m. After his evening meal he is further instructed to take a glassful of the preparation at 8:00 p. m. and at 10:00 p. m. Another glassful should be near his bed in case he awakens during the night. Should his position call for travelling, he may order his mixture in the Pullman dining car, or he may procure a milk shake or malted milk at some convenient stopping place.

With reference to the use of alkali in his ambulant treatment for duodenal ulcer, Alvarez comments as follows: "Occasionally I have found cases in which in addition to the diet, the usual mixtures of magnesia, sodium bicarbonate and bismuth was helpful, but in the last thirteen years I have not prescribed it more than five or six times. Much can be said for the theory of alkalization, but the fact remains that in all these years my results with frequent feedings were so satisfactory that rarely did the patients feel the need of going back to their soda."

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NEBRASKA UNIVERSITY HOSPITAL
CLINICO-PATHOLOGICAL CONFERENCE

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Edited by
L. L. Davidson, M. D.

CASE NO. 21098. October 29, 1926.

A white, married, mailman, aged 45, walked into the receiving room on October 15, 1926, complaining of:

Shortness of breath.

Soreness in upper abdomen.

Cough.

Lightheadedness.

ONSET AND DEVELOPMENT: When about 15 years of age, patient suffered from acute articular rheumatism. He was in bed for about three months. Various joints were swollen and so tender that he had to be turned on a sheet. Another attack occurred the following year. Since then the patient was fairly well until ten years ago when he noted double vision when walking or when separating mail. He was treated at the University Dispensary at this time for heart trouble, a cardiac murmur having been recorded and digitalis having been prescribed although decompensation was not evidenced. Later a feeling of dizziness and light-headedness devoloped. He felt at times as though he was falling to the left. Two years ago the diplopia disappeared at which time he was under Dr. G. Alexander Young's care. About ten months ago he noted shortness of breath and that he tired easily. This became more severe and he entered a hospital. In July, one or two weeks, he took digitalis. He was in bed at home six weeks before returning to work. For the past two or three months he has had a cough along with dyspnoea and weakness and has laid off from work frequently. With the onset of weakness and dyspnoea a pain developed across the upper abdomen which was expansive in character. Nausea occurred but no vomiting.

PREVIOUS HISTORY: In the previous history it is to be noted that the foci of infection have been sought. Teeth have been extracted and the septum straightened. La grippe was suffered in May, 1926. Neisserian infection was contracted when twenty years of age. His weight has been fairly constant, being 150 pounds in 1925.

FAMILY HISTORY: Wife living and well, no children, one miscarriage. One brother has epilepsy.

PHYSICAL EXAMINATION: Examination reveals an anemic man appearing older than stated age lying in bed, groaning with pain.

Head: Blotchy, colorless plaques on the face and hair is scanty and white.

Eyes: Pupils react to light and accommodation. No diminution in fields. Muscular coordination is good. No strabismus or nystagmus.

Nose: No obstruction. The septum has been removed.

Teeth: Few fillings but in good condition.

Tongue: Coated. Papillae are present. No atrophy.

Neck: Few small post-cervical glands. Thyroid not palpable.

Lungs: No change in tactile fremitus, resonance or breath sounds.

Heart: Point of maximum intensity (P. M. I.) 6th interspace, 7 cm. from midsternum. Left border not determined.

Apex: Accentuated first followed by loud systolic murmur and indistinct second.

Tricuspid: Systolic murmur follows sharp first sound.

Erb's point: Systolic blow followed by loud diastolic murmur.

Aortic: Loud murmur occupies cardiac cycle both systolic and diastolic in time.

Pulmonic: Distant systolic murmur followed by accentuated second.

Abdomen: Liver dullness in 5th interspace extending three fingers below costal margin. Marked tenderness over liver on deep pressure.

Extremities: Symmetrical. Knee jerks not obtained. No Babinski.

Pulse: Low rise, low fall, difficult to palpate.

LABORATORY: The urine on admission was 1,022 sp. gr., alkaline, without albumin, sugar, diacetic, acetone, casts or pus cells. This remained negative throughout the course of the disease. The blood count was 3,950,000 R. B. C. and 18,200 W. B. C., hemoglobin 68%. The blood count was later repeated with a R. B. C. of 3,970,000, W. B. C. of 15,400. In both counts there was a preponderance of polys 68% to 81%. The blood pressure was questionable, 90/70.

A gastric analysis done on two separate occasions showed no free HCI, a low total acidity and no significant microscopic findings. Temperature 98.2, pulse 96, respiration 24.

PROGRESS: Patient was in the hospital six days. He was able to lie flat in bed but was most comfortable when resting on his hands and knees. Additional information was given that luminal had previously been given for petit mal. Nervousness was emphasized and complaints of headache and dizziness registered. The temperature gradually rose from 100 to 102 and dyspnea became more marked. Pulse rate averaged between 100 and 110 and was very hard to get at the wrist. In the last twenty-four hours a duskiness appeared through the pallor. Temperature rose to 102, the respirations became labored with a rate of 30, the left border is reported 7 cm. from the mid-sternum line and the patient died a cardiac death. An x-ray report which was given the day following admission states:

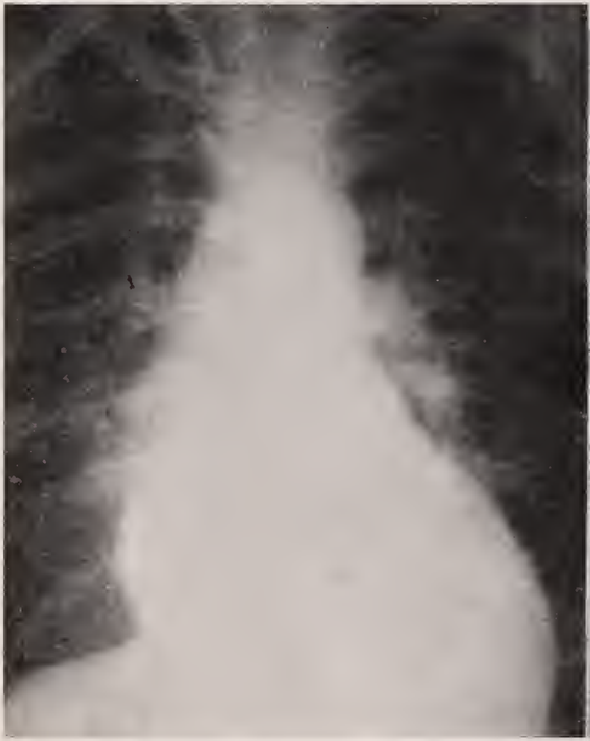

Fig. 1. Anterioposterior view of chest at 6 feet distance. No alteration in chest contour. Heart shadow enlarged transversely, apex extending down to 7th interspace, extending laterally to anterior axillary line. Widening of aortic shadow. Increase in hilar markings and peribronchial tracings probably due to passive congestion.

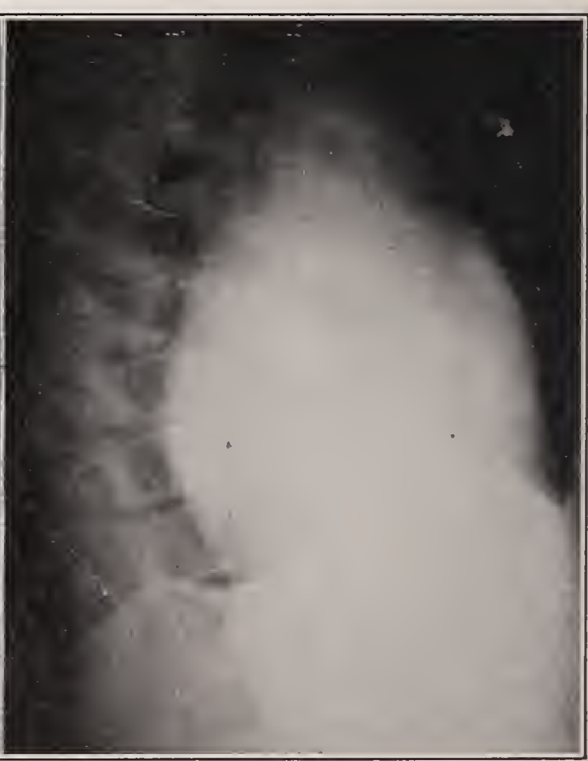

Fig. 2. Lateral view of heart demonstrating an increase in anterioposterior diameter with normal shadow of arch.

"The heart is greatly enlarged, both to the right and to the left, but chiefly on the left where the border extends almost to the chest wall. The heart is of the transverse type with a broad base. The great vessel area is not enlarged. There is some calcification in the left lung. The lung markings extend well out to the periphery on both sides."

An electrocardiogram made the same day reports probable heart degeneration with left preponderance.

DR. A. D. DUNN'S DISCUSSION

Often there is not enough stress placed on the value of a good history. One of the important functions of a history is to furnish "leads". To get evidence to be used in constructing a diagnosis is often of secondary importance.

The syndrome presented in the patient's complaint, namely, shortness of breath on exertion, soreness in the upper abdomen, cough and lightheadedness, immediately suggests cardiac decompensation. Supporting this "lead" we learn that at 15 years of age the patient suffered from a severe attack of acute articular rheumatism which recurred the following year. It must have been a severe infection that kept a patient in bed three months and during such a severe blood-borne infection the endocardium is almost invariably affected. Either an endocarditis or a myocarditis of appreciable severity should have resulted. Twenty years afterward it is noted that he complained of double vision when walking or when separating mail. Double vision, however, lasted about eight years and was controlled by luminal.

With a history a diplopia developing insidiously we must consider:

1. Eye strain.
2. Alcoholism.
3. Epidemic encephalitis.
4. Epilepsy—since a brother was troubled with epilepsy.
5. Lues.

About ten months ago symptoms referable to cardiac trouble became so severe as to require hospitalization. After improvement he returned home in two weeks, staying in bed six weeks and gradually returned to work. Cough with dyspnea necessitated frequent rests.

The fact that the man is 45 years of age and that he first began to have symptoms of decompensation only ten months ago, suggests lues or some other superimposed infection. Seldom do men and women of this age die from their first cardiac break-down without infection. Taking only ten months to break-down so completely as to produce death means infection. A heart will not break-down from mechanical disturbance in this manner. Unless there is violent abuse of the heart the tendency is not for a mechanical lesion to cause a man's death in ten months unless there is an infection, above everything, lues of the aorta. When a patient with lues of the aorta decompensates he usually does not recover, for this infection is progressive and continues to destroy.

A question that we should like to have answered here is whether or not there were lung manifestations, particularly chronic passive congestion of the lungs. The previous history is negative until the grippe in May, 1926. It is possible that this is the infection that preceded the decompensation. A Neisserian infection at 20 years of age is also significant for luetics in late life often give a history only of a Neisserian infection.

His wife's miscarriage and no children gives another "lead" toward lues.

The physical examination showed an anemic man appearing older than stated age, lying in bed groaning with pain. Pain is significant and should be described in detail in order that we may visualize the physiological disturbance which causes the pain.

In an anemic man of 45 years of age we must consider infection, cancer, pernicious anemia, nephritis, leukemia and hemorrhoids. Under infection comes lues, regardless of a negative Wassermann. The normal reaction of the pupil is something against lues. The palpable posterior cervical glands suggest sinuses or, again, lues. No evidence of fluid was reported in the chest examination. The interpretation of the heart findings is difficult. The localization given for the murmurs is indefinite. In describing murmurs one should mention:

1. Location, (where best heard).
2. Time.
3. Pitch.
4. Intensity.
5. Quality.
6. Transmission.

Pericardial friction rubs are sounds that do not fit into the cardiac cycle and have characteristics such as to-and-fro rythm, diffuse, superficial, often scratchy, or leathery sound which is not transmitted well. No definite evidence of friction rub was given but pericarditis cannot be excluded and is a likely explanation for the rapid heart failure. There is no evidence given of a presystolic murmur preceding the accentuated first at the apex and there is no evidence of a thrill supporting this loud systolic murmur heard at the aortic area. Diagnosis of mitral insufficiency without symptom of stenosis is awfully hazardous and to make a diagnosis of stenosis there should be a presystolic murmur, and an accentuated first—the presystolic murmur heard best at the apex. To diagnose an aortic stenosis there should be a plateau pulse, a distinct rough murmur over the aortic region and a palpable thrill.

The dome of the liver was in the 5th interspace and extended three fingers below the costal margin, tender on deep pressure indicating passive congestion. Another "lead" toward cardiac decompensation.

The x-ray examination of the heart assists us in labeling the valvular disease. The heart is enlarged both to the right and to the left, *chiefly to the left*. On the whole, the shadow indicates aortic disease. The electrocardiogram is of little assistance, suggesting only a myocardial degeneration and a left preponderance.

The analysis of the case brings us to the following conclusions:

1. Death from cardiac decompensation as immediate cause.
2. Myocarditis—the heart failure is too rapid and progressive to be explained on a mechanical basis alone.
3. Pericarditis. This diagnosis was made by *Dr. W. N. Anderson before admission and al-

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*A diagnosis of pericarditis by W. N. Anderson should hold. In evaluating diagnoses reported by patients the character of the man said to have made the diagnosis is of paramount importance.

though the evidence submitted is insufficient to make more than a presumptive diagnosis of pericarditis with the inevitable associated myocarditis, such a condition would explain adequately the progressive course of the case.

4. Chronic endocarditis.
   Mitral insufficiency—probably stenosis.
   Aortic stenosis — based on murmur at base, cerebral symptoms, low tension pulse and because heart shadow is not typically mitral.

5. Chronic passive congestion of the liver.

6. Infection — the most significant thing in our case is that infection has entered into the picture in the past year and produced conditions from which death ensued. The location of this infection is not apparent unless it be in the pericardium and myocardium. Fever in the last days indicates an acute infection—location not known.

Although there is much evidence suggesting lues in the history there is a negative Wassermann and the heart pathology is not typically luetic. We must turn to the pathologist for a diagnosis of syphilis.

DR. A. J. MILLER'S DISCUSSION

On external examination no edema of the body is noted. On opening the trunk there is found to be 300 cc. of clear, straw-colored fluid in the peritoneal cavity and the liver extends 3 cm. below the costal margin but its upper level is low. In the pleural cavity there is fluid on each side, the greater quantity being on the right. There are hemorrhages into the serous surfaces of the lungs and heart. The heart in situ touches the left chest wall. It extends 4½ cm. to the right, its vertical diameter being 13 cm. The pericardial cavity is entirely obliterated by old connective tissue. The heart weighs 666 gm. and there is hypertrophy of all parts. Mural thrombi are in the right appendage. The aortic orifice is held open and stenosed. The mitral orifice is also stenosed and the leaflets are thickened, stiffened and scarred. Both mitral and aortic are old lesions, infectious in origin.

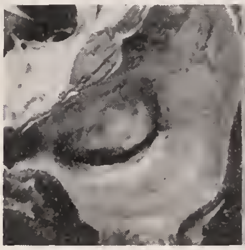

Fig. 3.

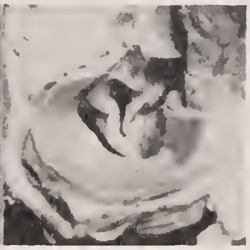

Fig. 4.

Fig. 3. View of mitral valve from above showing the stenosed orifice and thickened valves. The atrial wall is hypertrophied.

Fig. 4. View of aortic valve from above. The cusps are adherent and thickened, resulting in stenosis and regurgitation.

Lungs—The lungs are both heavy, the right weighing 1170 gm. and the left 920 gm. The lungs are darkened and it is suggested that they are the site of an early infection. Several small infarcts are seen in the lower lobe of the right lung. On cut section both liberate fluid and the increase in weight is due to the increase in fluid and congestion.

Liver — The liver weighs 1600 gm. The sectioned surface is of the typical nutmeg color of chronic passive congestion.

Kidneys — Not enlarged. The capsules strip easily. The vessels of the kidneys are injected. The sectioned surfaces are granular and tinged with yellow.

Aorta — Very little atheroma appears in the aorta and there is no suggestion of lues found in the intima. A diagnosis of syphilis cannot be made pathologically.

Brain — There is no accumulation of fluid in the meninges. The brain appears normal. Sections were made of the motor cortex anticipating sclerosis but we can hardly expect this here even though this patient might have had epilepsy; for sclerosis is a result and not a cause of epilepsy.

Interesting findings are found microscopically. Sections of the heart show no active foci of infection but there are many scars. We have to look back so often and interpret what has happened when we look at scars. These scars are characteristic in that they are associated with the blood vessels and are aseptic. An occasional large endothelial leucocyte is all that is seen in this connective tissue. Undoubtedly at an earlier date these scars would have been typical Aschoff bodies. The interpretation of these findings is rheumatic myocarditis.

The lungs have thickened alveolar walls with typical heart failure cells which are characteristic of passive congestion.

The liver presents a mottled appearance. Small areas of firm liver tissue appear at the periphery of the lobules. Chronic passive congestion of the liver and small areas of hemorrhage are demonstrable.

In the kidneys there is marked passive congestion of the vessels. A few casts are seen. An old sclerosed glomerulus is of no significance in a man of this age as it is found in practically every kidney. We find swollen epithelium, irregular lumina filled with debris apparently from epithelial cells.

Necropsy diagnosis:

1. Cardiac decompensation.
2. Aortic stenosis and regurgitation.
3. Mitral stenosis.
4. Chronic adhesive pericarditis.
5. Chronic passive congestion of the lungs, liver, spleen and kidneys.
6. Septicemia.

CARCINOMA OF THE STOMACH: ITS SURGICAL TREATMENT. SPLENIC ANEMIA: ITS SURGICAL TREATMENT.*

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I am presenting Mr. P., a man seventy years of age, who last summer began to have stomach trouble. It began with a loss of appetite, accompanied later by vomiting. He never had pain. I saw him in November. An x-ray of his stomach showed carcinoma involving about three-fifths of the stomach. It extended high on the lesser curvature. We decided to explore it. Before he was explored his stomach was pumped for a period of about a week and he was given a lot of fluids, including glucose per rectum and water subcutaneously. He was markedly dehydrated, and had a loss of the chlorides of the body. He was accordingly given salt in his proctocilyses, and water with salt per mouth.

He responded well to this treatment so that his blood urea came to normal and his body fluids appeared to be in much better condition, and he was explored. The carcinoma extended high on the lesser curvature, so about three-fifths had to be removed. He made an uneventful recovery. His only complaint is that he must eat five times a day because there is not enough stomach left to take a full meal in. He has no nausea and no other stomach complaint.

I think the two important things about these cases are: First, the only treatment for them is surgery. While you are in there, if there is any chance to take out, you had better make the attempt, even though the patient should die in the attempt, because there is certainly nothing else to offer. Second, if you can feel the mass there is a better chance to remove it than if you cannot feel the mass. A doctor with whom I was speaking a couple of months ago said he had a case two weeks previous who died. The doctor had not advised operation because he could already feel the mass. That is the best type for operation. The reason, of course, is if you can feel the growth, it is near the pylorus — at least part of it. The only ones you cannot resect are those which involve the cardia. If you have enough room to hook up a piece of bowel, that is all the room you need.

We did a Polya-Balfour type of operation because there was not enough stomach left to do a posterior Polya. If you run short on stomach, it is better to do the anterior type of operation.

Case 2. This lady I saw just about five weeks ago. She gave a history of having been diagnosed gall-bladder trouble, but the diagnosis was made largely on a feeling of ill-being in the abdomen, and a peculiar paleness which was considered an icterus.

I found a spleen about nine times normal size. There were no other physical findings of importance except a marked paleness. The blood picture was that of a secondary anemia — 38 per cent hemoglobin and three million red blood cells. There were 3500 white cells. This is the picture in splenic anemia. The only thing she did not have is gastrointestinal hemorrhages. In the later stages of this disease we have what we call Banti's disease, which is splenic anemia plus ascites.

A splenectomy was done four weeks ago. The patient feels very much better. Her blood picture has gone up so that her hemoglobin is in the upper 60's, and she has no complaint whatever. She says it has been fifteen years since she felt as well as now.

In doing a splenectomy for splenic anemia, you find generally a spleen which is adherent to the peritoneum and diaphragm. There is generally a certain amount of perisplenitis in this disease. That is the most difficult type of spleen to remove. In removing the spleen, one must be careful of two things: First of all, the greater curvature of the stomach comes within one-half inch of the spleen. In clamping off your vasa breve, it is easy to let your clamp touch the stomach and bite a little hole. If that happens, you will probably have peritonitis. Secondly, the tail of the pancreas comes into your splenic pedicle. If you are not on the lookout you will cut off some pancreas. It is not of any particular moment, but you leave an open pancreas with oozing of pancreatic juice, which is a digestant, and you are apt to have trouble from digestion of your abdominal organs and belly wall.

The first thing to be brought up in differential diagnosis is pernicious anemia. She had no soreness of the tongue or neurologival findings; no numbness or tingling of the finger tips. She had no achylia and she had a minus index. That may be ruled out.

Hemorrhagic icterus was one harder to rule out, because her paleness was almost an icterus. But hemorrhagic icterus is cured by splenectomy. If she had had hemorrhagic icterus, she would have had some icteric tint, and the bile would be present in the feces and absent in the urine. But the fragility of the red blood cells is greatly increased in hemorrhagic icterus. Testing with hypertonic salt solution, the red blood cells are fragile in the presence of hemorrhagic icterus, which is not true in splenic anemia. You find 20 per cent of red blood cells in hemorrhagic icterus that are reticulated. That was ruled out. A Wassermann ruled out lues.

I wish to say a word about lues involving the spleen. When you get an enlarged spleen in lues, frequently the only method of curing the disease is by splenectomy. Many of those patients will continue to give a positive Wassermann after several years' treatment. The infection will remain in the spleen and cannot be eradicated by ordinary luetic treatment. Following a splenectomy, the Wassermann will promptly become negative.

Tuberculosis of the spleen cannot be diagnosed ahead of time. When you find an enlarged spleen with no other cause for it, you must think of tuberculosis. There is one thing which should make you think of tuberculosis. If you find a patient who gives a history of a previous ascites which has cleared up and you have an enlarged spleen, it is most likely tuberculous.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

In conclusion, I would say, particularly in splenic anemia, hemorrhagic icterus, and hemorrhagic purpura — and I wish I had time to discuss that, because the results of splenectomy are absolutely 100 per cent — in those three diseases, the results with splenectomy are excellent. Excluding pernicious anemia and the leukemias, I think every large spleen is a menace and should be removed.

THROMBOSIS OF CAVERNOUS SINUS*

WILLIAM NOLAN, M. D.,
Omaha, Nebr.

I present for discussion this morning a case of a boy six years of age who, one year ago this month, fell, producing a slight laceration of the left lower eyelid so very trivial in character his folks did not deem it necessary to call a physician. Within thirty hours after the inception of this wound, this boy went into convulsions which were continuous and tonic in character. He was removed to St. Joseph's Hospital and a consultation held with Dr. W. P. Haney, who pronounced the eyeball negative, and decided calling a neurological consultant. Dr. Ernest Kelley pronounced it probably a beginning thrombosis of the cavernous sinus. On one side it communicates with the sphenoid fissure, and on the other with the transverse sinus. There is collateral circulation in the base of the brain. Dr. Kelley suggested the advisability of tying off the left internal jugular vein as the one possible hope of arresting this process. Dr. J. F. Langdon was called as surgical consultant. He tied it off within thirty minutes after the boy was admitted.

The blood count on admission showed a high percentage of polys—49,600—leukocytes—90 percent polys and 10 percent lymphocptes. The urine was negative.

Due to the early morning hour, we were unable to get suitable media for a blood culture. That is the only place we lack in the presentation of it.

The anterior border of left sterno mastoid was located and through an incision 1½ inches long the left internal juglar vein was exposed, ligated and divided. The incision healed by primary union.

The following day intravenous injections of mercurochrome and antislreptococcic serum were started. At 8 o'clock a. m. 10 cc. of a one percent solution of mercurochrome were give. At 8 o'clock p. m., 20 cc. of antistreptococcic serum were given. These alternating injections were kept up daily until patient showed improvement in temperature, pulse and respiration.

The first postoperative day, the temperature was 104; pulse, 108; respiration, 32. The evening temperature was the same. The boy was restless, and with apparently no influence from the one-tenth grain morphine and sodium bromide in fifteen grain doses every two hours to control the nervous state.

On the second postoperative day, the temperature was 102; pulse, 102; respiration, 24, in the evening. He was still restless.

On the third postoperative day, the temperature was 101; pulse, 88; respiration, 18. That night he slept soundly. The sleep was of such a type we did not believe it was caused from the therapeutic effects of the bromide or the morphine, because we had given little of these medications after the first thirty-six hours.

On the fourth day, his temperature was 100; pulse, 100; respiration 24. In the evening, the temperature was 101; pulse, 98, and respiration 30. He slept and rested well.

The white blood count was 20,800 — 86 per cent polys and 14 per cent leukocytes; hemoglobin, 67; blood culture negative. The culture from the region of the eye showed staphylococcus. The urine was negative.

On the fifth day, the temperature was 101; pulse, 100; respiration 20. In the evening the temperature was 102; pulse, 112; respiration, 26.

We alternated the doses of mercurochrome and anti-streptococcic serum until the temperature came on the eighth post-operative day to 99.4; pulse, 104; respiration, 22; and that evening the temperature was 102, pulse, 102, respiration 20. On this day he had a severe headache and an emesis of undigested food. On searching for the probable cause of this disturbance, we finally decided it must have been because of the day, which was Monday. He had had a lot of company on Sunday. Hhe had pop ,ice cream cones, and chocolate candy.

On the ninth day, in the evening, his temperature was 101.2; pulse, 90; respiration, 24; and he felt all right.

The eleventh and twelfth days were good, with a temperature ranging from 99.4 in the morning to 103 in the evening. A general arthritis and urticaria set in. His joints were so sore he could not scratch the urticarial rash. The arthritis was treated with salicylates and responded nicely in two days,and the temperature came back to normal. He was given soda baths and stearate zinc applied locally to allay the itching.

On the fourteenth day he sat up in bed. From the sixteenth to the nineteenth days he sat up in bed and walked. On the twentieth and twenty-second days the temperature was normal. We prolonged the hospitalization to be sure no complication would arise. His appetitte was good. He was dismissed on the twenty-first post-operative day. At home he was further treated with tonics and hygienic measures.

About a week previous to his discharge, an exophthalmous which was bilateral in character developed. An incision was made into the upper eyelid of the left side and nothing like pus obtained, although a culture showed staphylococcus growth. Before he left, a mass of purulent material was obtained and the exophthalmous decreased in size. The dressings and treatment were kept up. At the time of his discharge, the vision was good in that eye. An examination made yesterday showed he has 20/20 in the right eye and 20/40 in the left. The fundus is negative.

The success of this boy's treatment depended: First, on early diagnosis; and second, on courageous and prompt interference when the diagnosis was made, not waiting until morning, but going in right away and ligating the jugular vein. The theory is the ligation of jugular vein prevents somewhat the dissemination of infectious emboli into the general systemic circulation, and thereby prevents the formation of metastatic abscess. By slowing up the rate of absorption of purulent material, we were able to fortify his blood stream with enough antigermicidal measures to offset what was in there already and what got in through collateral circulation.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, Omaha, May 11-13, 1926.

As to the use of mercurochrome and the serum, had we known about the blood culture, we could have used a serum suitable for that particular infection.

DISCUSSION

J. F. LANGDON, M. D., (Omaha): Dr. Nolan has covered all the points. Recovery after thrombosis is so rare that when a case is reported, there is a tendency to question the diagnosis. We felt this was a typical case. I was called in to ligate the jugular vein. We did not think we would accomplish anything. We felt we were up against a stone wall.

The progress of the case Dr. Nolan has explained to you. How much the ligation had to do with this we cannot prove. I feel it must have had some value in this case, and I am sure in a like case I should always ligate the jugular vein early. There is communication on either side, but ligating on the invaded side we believe has more tendency toward recovery.

PROCEEDINGS AND REPORTS OF THE ANNUAL COUNCILOR MEETING, OMAHA, JANUARY 4, 1927

The annual meeting of the councilors was held at the University Club of Omaha, January 11, 1927. The meeting was called to order by Dr. Overgaard. The following members of the council were present: Drs. Overgaard, Preston, Bryson, Tornholm, Cook, Lehnhoff, Douglas, Potter, Rork, Plehn, Fordyce and Selby. In addition to these the following guests were also present: Journal Committee consisting of Drs. Bailey, Bridges, Long; Drs. Hohlen, C. C. Johnson, Hays, Schrock, Nielsen, Lukens, Sage, Dunn, Fouts, Adams and Messers. C. P. Peterson and Gene Huse.

Election of officers followed: Dr. Preston was elected president, and Dr. Overgaard re-elected as secretary. The regular routine of business was then taken up.

A committee of three consisting of Drs. Bryson, Tornholm and Plehn, was appointed by the chair to audit the books.

The report of the Committee on Scientific Work was read by the secretary, accepted and placed on file.

The report of the Medical Defense Committee was discussed. Motion made that the Medical Defense Committee report be accepted and placed on file. Seconded and carried.

The report of the Committee on Medical Education and Hospitals was read by the secretary, accepted and placed on file.

The secretary's report was read, accepted and ordered printed in the Journal.

Report of the Auditing Committee:

To the Council of the Nebraska State Medical Association:

Your Auditing Committee wishes to report that they have examined the financial statements of the General Fund, the Journal Fund, and the Defense Fund and find them as reported.

R. D. Bryson
Frank Tornholm
F. W. Plehn
Auditing Committee.

Motion made that the report of the Auditing Committee be accepted and the financial statements of all three funds be published in the Journal. Carried

Motion made that the Investment Committee invest $2,500.00 from the General Fund. Seconded and carried.

Dr. Long and Dr. Dunn were asked for reports but neither had anything further to report as the Journal Fund financial statement had already been audited and Dr. Dunn's report had already been read at the annual state meeting.

A discussion followed about the new constitution suggested by the A. M. A. and several suggestions were offered regarding committees to go over this new constitution.

Motion made that the president of the council appoint a committee with Dr. Long chairman, and Drs. Potter, Overgaard and Adams ex-officio members, to investigate this proposed constitution and report to the council at the first meeting of the council at the annual meeting. Seconded by Dr. Lehnhoff.

A substitute motion was made that Dr. Potter as president and the last three ex-presidnts with Dr Long as chairman, and Dr. Adams ex-officio, be appointed to investigate this proposed constitution. Seconded and carried.

The report of the Committee on Public Activities was read by Dr. Hays which contained a plan of work called "The Councilors Auxiliary Committee Plan." Following this up Dr. Fordyce made suggestions and recommendations that the different county societies take up a definite program and go through their list of members and get each individual to working, then if hurry up need comes for heavy work on the legislature the members of this auxiliary committee can handle the work very nicely. Dr. Fordyce also told that Dr. Hays had talked to Mr. A. J. Weaver about putting on a health program at the state fair and that Mr. Weaver as a member of the Board of Agriculture heartily recommended it and asked that a committee of doctors meet before the Board and talk to them about this plan. Dr. Lehnhoff suggested that it be the sort of an exhibit that would catch the eye. Dr. Neilsen spoke against the baby contests and why he thought the baby conferences were better.

Motion made that Dr. Hays' report be accepted and published in the Journal. Seconded and carried.

Dr. Schrock read the report of the Insurance Committee.

Motion made that the Insurance Committee report be accepted and placed on file and that a copy be mailed to each county secretary. Seconded and carried.

Motion made that it be the wish of the council and that they recommend that the Public Activities Committee meet with the State Board of Agriculture. Seconded and carried.

Dr. C. C. Johnson was called on to give a review of the report of the Committee on Medical Defense. He answered the question "Why, with the other insurance policy, we need the $2.00 for the Defense Fund." He told of the educational work they have to carry on and how they have to investigate each suit that is brought against the doctor, watch the decisions of this suit and see that new laws are not made that are detrimental to doctors. He also made a recommendation that the Medical Defense Committee pay no bills except those on voucher and that Dr. B. B. Davis be chairman of the committee and be paid $50.00 a month salary as provided in the By-laws. Then Dr. Davis could turn this check over to the other party.

Motion made that Dr. Johnson's report be accepted. Seconded and carried.

Dr. Selby read a resolution made by the Lincoln County Society and offered the resolution read for the consideration of the House of Delegates at the next meeting. Resolution withdrawn until the regular session of the House of Delegates.

Mr. Peterson gave a short talk on ethics.

A report of the Legislative Committee was read by Dr. Bailey.

Motion made that the bill for the examination for the Basic Sciences as was presented by the committee, meets with the approval of the council and that the council present their compliments and appreciation for what the committee has done. Seconded and carried.

Dr. Hohlen read the report of the Campaign Committee.

Motion made that the report of the Campaign Committee be accepted and appreciation shown for what the committee has done. Seconded and carried.

A. P. Overgaard, Secretary.

SECRETARY'S REPORT

The Nebraska State Medical Association finished the year 1926 with 1,218 members which is 10 more than for the year 1925. Considering that this increase came in the face of a raise in dues, your secretary believes it worth noting. This is also the largest membership in the history of the Association. During the year 84 new members came in and 74 became delinquent. Of these 74 a number were due to deaths and removals from the state. On the first of April the usual letter to delinquents was sent out and in December the usual letter to all eligible non-members was mailed. The results of both of these letters are always worth while.

During the year several new activities were started, all of which will add to the merit of the Association and make membership more desirable.

First, a plan of group insurance was arranged with the United States Fidelity and Guarantee Company. Second, a pamphlet describing Periodic Health Examinations were mailed to every member and by letters, demonstrations, and editorials, all members were urged to begin making these examinations. Third, the Committee on Public Policy and Legislation has prepared a bill to be submitted to the legislature which will establish a board of lay examiners for the Basic Sciences concerned with the healing art. Working with this committee Dr. Hohlen, Chairman of the Campaign Committee, has done much in getting the members enthusiastic about the bill.

The reports of the committees concerned in all the above work will furnish the details necessary for a complete understanding of their activities.

During the time that your secretary has been in office it has always been his aim to get as many members active in the Association work as possible and not have it a few-men organization. This has been slow work but the secretary believes that we can now see results worth while. The Committee on Public Policy and Legislation, The Campaign Committee, especially its chairman, the Group Insurance Committee, The Council on Medical Education, The Defense Committee, The Journal Committee, are all very active committees and are all doing a great deal of work. As a result the secretary thinks that a great improvement can be seen in the membership generally, not only as to interest in medical affairs, but in willingness to get out and work for our common good.

R. B. Adams, Secretary.

GENERAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

Jan. 1, 1926 to Dec. 31, 1926.

Cash Receipts				
Membership dues			$9,545.00	
Interest			65.57	
Total Cash Receipts				$9,610.57
Cash Transferred to Other Funds				
Journal Fund		$2,091.25		
Defense Fund		2,390.00		
Emergency to Defense Fund		680.20		
Total Cash Transferred			$5,161.45	$5,161.45
Balance Available for General Fund				$4,449.12
Cash Disbursements				
Salaries				
R. B. Adams			$ 600.00	
Office and Administrative Expense				
Rent		$ 180.00		
Telephone		89.00		
Printing		137.20		
Stamps		165.00		
Secretary of State Fee		1.00		
Latch Brothers		8.90		
Insurance Premium		5.00		
Typewriter		105.00	691.10	
Miscellaneous Expense				
Councilors Expenses		344.70		
Annual Councilor Meeting		26.80		
Huse Publishing Co., Programs		50.19		
Flowers		6.20		
Bray Productions Inc.		50.00		
Madeline Hillis		75.00		
Health Manuals:				
E. C. Sage	$42.00			
A. M. A.	86.00	128.00		
Steno. for Meeting		12.00		
C. A. Roeder		150.00		
Service Charge, Peters		.20		
F. A. Long (1925 Expense)		36.40		
A. M. A.		7.50		
K. S. J. Hohlen		500.00	1,386.99	
Convention Expense				
R. W. Fouts		70.24		
W. C. Alvarez		29.98		
Alice Cary Gilchrist		130.00	230.22	2,908.31
Total Disbursements for Year 1926				$2,908.31
Excess Cash Receipts over Disbursements				1,540.81
Cash on Hand Jan. 1, 1926				1,132.54
Balance—Cash on Hand Dec. 31, 1926				$2,673.35

GENERAL FUND

STATEMENT OF INVESTMENTS

Jan. 1, 1926 to Dec. 31, 1926

Investments on Hand Jan. 1, 1926		
Cash Held by Peters Trust Co.	$ 433.85	
Securities Held by Peters Trust Co.	3,500	$3.933.85
Balance in Account—Omaha Loan and Building Association		1,201.52
Total Jan. 1, 1926		$5,135.37
Additions to Investments During Year 1926 By:		
Interest Credits—Peters Trust Co.	$ 150.00	
Dividend Credits—Omaha Loan & Bldg	63.90	213.90
		$5,349.27
Withdrawals During Year 1926		
Trustee Fee Year Ending Feb. 8, 1926		8.75
Investment on Hand Jan. 1, 1927		$5,340.52

Represented By:		
Cash Held By Peters Trust Co. ...	575.10	
Securities Held by Peters Trust Co.	3,500.00	
	$4,075.10	
Balance in Account—Omaha Building & Loan Association	1,265.42	$5,340.52

DEFENSE FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

Jan. 1, 1926 to Dec. 31, 1926

Cash Receipts			
Share of dues received from General Fund		$2,390.00	
Interest received		23.55	
Transfer emergency from General Fund		680.20	
Total Cash Receipts			$3,093.75
Cash Disbursements			
A. S. von Mansfelde, salary		$ 600.00	
Attorney Fees			
Hainer & Flansburg.......	$ 500.55		
H. A. Bryant................	1,103.30		
J. C. Kinsler...............	150.00		
R. M. Switzer..............	100.00		
Sackett & Brewster........	200.00		
Peterson & Devoe.........	250.00	2,303.85	
C. C. Johnson, Expense.............		165.83	
Charge for crediting interest........		3.12	
Total Cash Disbursements..................			3,072.80
Excess Cash Over Disbursements...........			20.95
Cash on Hand Jan. 1, 1926..................			112.75
Balance Dec. 31, 1926.........................			$ 133.70

DEFENSE FUND

STATEMENT OF INVESTMENTS

Jan. 1, 1926 to Dec. 31, 1926.

Investments on Hand Jan. 1, 1926:		
Cash Held by Peters Trust Co.....$	80.17	
Securities Held by Peters Trust Co.....	1,500	
Total Jan. 1, 1926...........................		$1,580.17
Interest Credited During Year..............		48.13
		$1,628.30
Cash Transferred:		
Trustees Fee for Year Ending 2/8/26........$		6.25
Investment on Hand Jan. 1, 1927.............		$1,622.05
Represented by:		
Cash Held by Peters Trust Co.......$	122.05	
Securities Held by Peters Trust Co..	1,500.00	$1,622.05

JOURNAL FUND

STATEMENT OF CASH RECEIPTS AND DISBURSEMENTS

Jan. 1, 1926 to Dec. 31, 1926.

Direct Journal Receipts:			
Advertising Space		$4,642.51	
Cuts		119.94	
Copies Sold		20.30	
Subscription to Journal.............		26.75	
Dividends Cooperative Advertising..		224.92	
Total Direct Receipts........................			$5,034.42
Share of Dues Received from General Fund.			2,091.25
Total Receipts from All Sources.............			$7,125.67
Direct Journal Disbursements:			
Salaries:			
F. A. Long.................	$1,200.00		
R. B. Adams...............	1,200.00	$2,400.00	
Publication Expense:			
Huse Publishing Company.	$4,197.68		
Baker Bros. Engraving Co..	184.79		
Capital Eng. Co............	172.62		
Universal Press Clipping Bureau	42.00	$4,597.09	
Total Direct Disbursements.................			$6,997.09
Excess Cash Over Disbursements............			$ 128.58
Cash on Hand Jan. 1, 1926..................			2,141.19
			$2,269.77
Investment Made — Union Loan & Savings Assn.			1,500.00
Total Cash on Hand Dec. 31, 1926...........			$ 769.77

JOURNAL FUND

STATEMENT OF INVESTMENTS

Jan. 1, 1926 to Dec. 31, 1926.

Investment on Hand Jan. 1, 1926:			
Balance in Account—Omaha Loan & Building Association		$2,309.90	
Balance in Accounts—Standard Savings & Loan Association..........		1299.18	
Total Jan. 1, 1926...........................			$3,609.08
Additions to Investment During Year 1926 By:			
Febr. 1, 1926 Investment — Union Loan & Savings Assn.............		$1,500.00	
Dividend Credits—Union Loan and Savings Association:			
June 3, 1926...............	$37.00		
Dec. 31, 1926..............	46.11	83.11	
Dividend Credits — Omaha Loan & Building Assn.:			
July 1, 1926................	$63.52		
Jan. 1, 1927................	59.33	122.85	
Dividend Credits — Standard Savings & Loan Assn.:			
July 1, 1926................	$38.97		
Jan. 1, 1927.................	41.14	80.11	1,786.07
Investment on Hand Jan. 1, 1927.............			$5,395.15
Represented By:			
Balance—Omaha Loan & Building Assn.		$2,432.75	
Balance—Standard Savings & Loan Assn.		1,379.29	
Balance — Union Loan & Savings Assn.		1,583.11	$5,395.15

Applicants for admission to the Physicians' Home have been chiefly doctors of first-rate standing, some of them of national reputation who have been too much interested in rendering public service to think of storing up a competence. Some have been engaged in investigating and laboratory work on salary which leaves no margin for the savings bank. Family doctors have often been too generous to think of themselves when looking after a clientele requiring their time, knowledge, skill and sympathy.—Robert T. Mooris.

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Vol. XII February No. 2

ROSTER OF OFFICERS

	Term Expires
Dr. H. E. Potter, Fairbury, President	1927
Dr. C. P. Fordyce, Falls City, Vice President	1927
Dr. Isaiah Lukens, Tekamah, Vice President	1927
Dr. R. B. Adams, Lincoln, Secretary-Treasurer	1927
Dr. W. P. Wherry, Omaha, Librarian	1927

COUNCILORS

Dr. R. D. Bryson, Calloway	1929
Dr. L. W. Rork, Hastings	1929
Dr. C. A. Selby, North Platte	1929
Dr. F. W. Plehn, Scottsbluff	1929
Dr. S. A. Preston, Fremont, Chairman	1928
Dr. W. J. Douglas, Atkinson	1928
Dr. Frank Tornholm, Wahoo	1928
Dr. H. E. Potter, Fairbury	1928
Dr. A. P. Overgaard, Omaha, Secretary	1927
Dr. H. J. Lehnhoff, Lincoln	1927
Dr. C. P. Fordyce, Falls City	1927
Dr. A. E. Cook, Randolph	1927

DELEGATES TO A. M. A.

Dr. A. D. Dunn, Omaha	1927
Dr. R. W. Fouts, Omaha	1928

DELEGATE, COUNCIL ON MEDICAL EDUCATION, A. M. A.

Dr. J. S. Welch, Lincoln	1927

MEDICO-LEGAL DEFENSE COMMITTEE

Dr. A. S. v. Mansfelde, Ashland, Honorary Chairman	
Dr. B. B. Davis, Omaha, Chairman	1929
Dr. Czar C. Johnson, Lincoln	1928
Dr. R. B. Adams, Lincoln, Secretary	1927

Note: In case of suit notify secretary at once.

THE OPPORTUNITY OF THE PROFESSION

A Bill fostered by the Legislative Committee of the Nebraska State Medical Association, embodying the best thought of educators and welfare workers throughout the country, demanding education in the sciences fundamental to Medicine as a preliminary requirement for licensure to practice the healing art by any method, is before the Legislature for action with better prospects of passing both Houses than any welfare legislation that has been brought up for consideration for many years. The most important features of the proposed Bill are published in this issue. The entire Bill contains about 5000 words.

Standardization of those who engage in the art of healing must come. Education in the sciences fundamental to Medicine is the basic thing and the proper move in this direction. Let all practitioners of the healing art conform to this fundamental training; then let them treat their patients according to their own preferred methods. This measure does violence to no method of cure — it simply brings all to the same basic foundation of scientific knowledge. The Bill is not retroactive and will not affect those now licensed to practice in this state.

Herein is proposed constructive legislation of the first order. This is the organized profession's opportunity. If medical organization means anything, it means that every member must make a personal effort toward the passage of this measure. In some respects we have been a most helpless profession — too willing to "let George do it," and reserve the inalienable privilege of grumbling if things have not gone to suit us. If this measure is to be pushed to a successful conclusion, every member of the profession must get in line and help the movement by communicating with the legislative members from his county. The members must be seen if possible, for personal contact is much more fruitful than letter-writing; but in the absence of the possibility of personal interview, letters, telegrams or telephone calls will help. Let the legislators know how you feel about this measure and how strongly you feel about it.

Members of the Nebraska State Medical Association: Do your duty now or forever after hold your peace.

The total membership for 1926 was 1218 — the largest in the history of the Association and in the face of the higher dues, effective for the first time in 1926.

REFLECTIONS ON PERIODIC HEALTH EXAMINATIONS

Among the newer ideas in medical thought is that of periodic health examinations. Every layman and physician, who has given this subject any consideration, has asked himself whether it is a fad or whether it has come to stay. In answer to this question one must inquire into the soundness of the supposed advantages of such examinations, for nothing continues in use, unless it be right in principle, practical in operation and financially sound. In order to measure up to such a requirement it must first materially benefit those examined. To determine its practicability in operation, we must ask how and by whom such examinations shall be conducted. In order to be financially sound we must determine whether it would bring adequate returns both to layman and physician.

If we assume that a man were given a fine car or other desirable piece of machinery and he were positively assured that during his stay here, he could have but one car and no replacements, he would undoubtedly conserve, to the best of his ability, every wearing part. He would use only high grade fuel and lubricating oils and employ none but reliable mechanics to maintain it in proper adjustment. Owners and operators of machinery have learned that frequent inspections reduce expensive shut-downs and increase the value of production far beyond the outlay required for such inspections. If such is true of a piece of fine machinery, would the same principle not apply to the human body. The economic losses alone, due to preventable diseases and those conditions which could be avoided if the early signs were observed, run into millions of dollars annually. In addition there is shortening of life, death and immeasurable suffering to the individual and to his loved ones. The value of the early recognition of preventable and curable diseases is attested to by the fact that some insurance companies are willing to pay a fee for the yearly examination of their policy holders. We may be assured that they would not incur this expense were it not for increased length of life and increased number of yearly premiums paid to the company.

In order that an examination may be of value, it is necessary that the examiner be, not, perhaps the highest skilled, but skilled in the recognition and the evaluation of signs and symptoms in their relation to one another and to the individual examined. He should be willing and able to uncover hidden details, as only come through painstaking history and detailed examination with proper interpretation. Because of his contact with all phases of physical derangement and because of his intimate knowledge of the surroundings and make-up of the subject, it would seem that the family physician is best fitted to make this examination. Health bureaus and other similar organizations are already making attempted inroads into this field of medicine and it is suggested that the best means of combating these inroads into a field, which belongs primarily to the physician, is to educate, not only those in active practice, but those now in medical school, in the methods necessary to make such examinations valuable and desirable to every individual.

The benefits of such a regularly established practice must necessarily appeal to the layman and the physician as well. To the layman, through whatever means may be at hand, should be shown that the relatively small fee paid for such an examination constitutes a real insurance against the much greater expense incurred for medical assistance, nursing care, loss of time and more important than all, suffering, anxiety and possible fatal outcome of a severe illness. He should see that such an illness may have had its incipiency in some apparently trivial or unnoticed condition.

To the physician it will readily become apparent that such examinations will require considerable amount of time and thought, for which, but a relatively small fee can be charged and it will further be apparent that the recognition of early signs of dieases will reduce his income from long and protracted illness. There is, however, another side of the situation, which must hold his attention. The treatment of a hopeless illness is one of the most discouraging duties upon which a physician is called to practically waste his best efforts and thought. Instead he will be brought in contact with those conditions, which it would be a satisfaction to himself treat, or, to refer to some other reliable physician. The remuneration for such services if the recipient be a producer, can be in keeping with the services rendered, while if the same individual had reached a state of non-production, adequate remuneration becomes less probable.

Such considerations are, however, the least of all important. Prevention and correction of disease in the individual is in line with the work done in our own generation ushering in the era of preventive medicine. By such service the physician commands the respect of the community and by increasing productiveness, happiness and length of life about him, lives up to the high calling of an honored profession.

—H. E. Potter.

COUNCILORS

The custom has developed in Nebraska in late years of occasionally electing a councilor to the office of president. The councilor would then resign and a new man be appointed to fill his place. This would leave his work incomplete and it would take the new man some time to catch up to the place where the old councilor left off. Of course, this created a rather undesirable condition in the council due to the frequent changing of memberships. At one of the annual conferences of secretaries the writer took this matter up with the A. M. A. and secretaries of other states and found that almost universally over the country a councilor did not resign when elected president. The reason for this is that the office of councilor is considered probably the most important office of the Association and one which for this reason, should not be changed more often than is necessary. This information was given to the council at their mid-year meeting and it was decided to adopt this policy in Nebraska. The report of this meeting was read and approved at the next meeting of the House of Delegates.

—R. B. Adams.

DUES

Your annual dues to the Nebraska State Medical Association are now delinquent. Send $8.00 plus your County Society dues to your County Secretary. Early payment of dues insures you against loss of the Journal and prevents your Medical Defense from lapsing.

—R. B. Adams, Sec.

CALL FOR PAPERS

Any physician who wishes to read a paper before the annual meeting should send his name and title to the Association office, McKinley Building, Lincoln, Nebraska, at once.

—R. B. Adams, Sec.

INFANT FEEDING

To any one who has had much to do with the artificial feeding of infants it has been extremely interesting to observe the development of our knowledge and the changes which have occurred in our methods of feeding in the last three decades. In this country it has been a far cry from the percentage feeding of Rotch and his followers, the top milk feeding of Holt, the caloric method of Dennet, the buttermilk feeding of Brady, the lactic acid milk of Marriott and his followers, down to the art of feeding the baby simple mixtures of milk, water and sugar, so that he will gain and thrive in a normal way.

A great deal of confusion has come from inability to combine our scientific knowledge of infant feeding with the art of feeding the individual baby. One's ability to artificially feed babies cannot be learned in the laboratory, in the hospital ward, or when the baby is ill. The feeding of babies is an art, which has for its basis certain fundamental, scientific knowledge and can be learned only by each physician in his own way, by experience and personal contact and observation of the individual baby. All babies cannot be fed by any one method, nor with any one food. The chapters on infant feeding in most of the text books are most confusing and usually only serve to whet the desire for further observation and personal experience.

After all, the essential thing in successful infant feeding is practical common sense. Is the baby gaining from week to week? Is he comfortable? Is the amount of food he receives in twenty-four hours adequate for his needs? The estimation of the amount of calories the baby is receiving is not to be entirely discarded, but one must remember that babies will vary greatly in their ability to properly take care of large or small amounts of food. So that in the final analysis calories are not of great importance.

The physician is constantly confronted with a vast array of ready made foods, each accompanied with explicit directions. At the best these foods are useful only occasionally. It would seem wise that each physician should carefully and interestedly study each individual nutritional problem in the infants under his care, bringing to it the same thought that he would in an illness. In this way he will work out for himself his own way of taking care of the nutrition of the infants brought to him. It is universally conceded that breast milk is the natural food for all babies. When this fails or is inadequate practically the only worth while substitute is cow's milk. Keeping in mind these facts, remembering the fundamental principles of nutrition which he learned in medical school, and realizing that in the very nature of things the foods from cans, bottles, and cartons are inadequate to meet the demands of the thriving infant, the physician by study and application should be able to feed babies successfully.

—Floyd Clarke.

About the only part of you that notices the difference when you're riding in a cheap car is the ego.

SHALL THE MEDICAL PROFESSION DO COLLECTIVE ADVERTISING?

The profession is always interested in the lay press when the lay press is sympathetic toward scientific medicine. *The Scottsbluff Republican* of recent date (Dec. 24), published an extended editorial, possibly inspired by a medical mind, on "Should Doctors Advertise?" that deserves passing comment.

Starting with the proposition that the physician sells health, the most valuable thing in the world and that his potential clientele is about a million people, the writer asks how shall this million be told the truth? It is the duty and the privilege of doctors to keep the public in touch with the latest developments in treatment, especially on such afflictions as cancer, epilepsy, mental disorders, tuberculosis, etc., and then proceeds with the proposed solution:

> "The doctors must tell their story to the public. And they will do it soon. Make no mistake about that.
>
> Suppose one hundred thousand physicians in this country began to publish a series of messages in the newspapers. Suppose that these messages merely told the people that health consisted in; how to recognize certain symptoms; how to eat, stand, work, and breathe; what to do in case of physical injury; when to see a doctor. And suppose, also, that each message ended with a suggestion that only a reliable physician with an M. D. after his name should be relied upon. And the reasons for the selection of the physician were thus and so; and prove the point.
>
> What would become of the quacks, then?
>
> Advertising of the doctor's work, his accomplishments, his successes, and his value to the community, done cooperatively, smacks not at all of vain-glorious, personal boasting and takes the smear of charlatanry off the message. And such messages would be helpful to the public.
>
> Paint manufacturers are altruistically telling the story of surface protection. Their slogan, "Save the Surface and You Save All", is known to millions and, incidentally, paint sales have jumped. But the messages first tell something of news value and of interest to the reader, how to save his property from decay. It is an appeal that touches him in a vital spot — his pocketbook:
>
> And the appeal that the successful and ethical paint makers use is peculiarly analogous to the appeal that doctors might make; for which hits a person in the pocketbook hardest; neglecting his front porch or neglecting his body? The porch floor, decayed from lack of surface protection, can be renewed, but the arteries hardened through lack of attention can never be replaced. There surely can be no argument on this point.
>
> If the Maker had put a plate glass front on the bellies of bellicose boozers, prohibition would have been here in 1850. You can see your shingle roof warp and split under the rays of the sun; and you buy the paint to prevent further damage — the paint advertising has sold you. But you cannot see what happens when you refuse to exercise, eat the wrong food or stretch your nerve capacity beyond endurance.
>
> Folks know more about carburetors than cardiacs, a great deal more about spark plugs than about spleens, and because this is so, the quacks, working upon hidden organs, get away with murder.
>
> Collective advertising by physicians can do much to educate the public. The marvelous story of the body and how it may be repaired should be told, and incidentally the doctor's practice will increase. Preventive medicine will come in a large way only when mass advertising of the right sort is used.
>
> And advertising is but a frame — the message is the picture. Doctors should look well to the message and forget the frame — it is only there to carry the canvas. There are many kinds of advertising copy as there are pictures. Well done advertising can rouse the doctor from his present decadent position and lift him to the heights of popular esteem.
>
> To refrain from advertising much longer may build in a receptive public consciousness the idea that, after all, the quacks are right; the doctors do not deliver the goods. For if they do deliver, why do not they say so — and prove the point?
>
> Should doctors advertise cooperatively? Assuredly. Yes. We think so."

IRRADIATION OF DISEASED TONSILS

J. Coleman Scal, Med. J. and Rec., 124:873, Dec. 1, 1926, describes a new method of treating tonsillar hypertrophies by means of Removable Platinum Radon Seeds, giving detailed reports of a series of cases where tonsillectomy was for different reasons contraindicated, and illustrating the application of the technique to varying pathological conditions.

To carry out the application of the seeds, a new implanter is used which is illustrated and described in the article.

As the pain of implantation and removal is practically nil, at no time is any anesthetic required, there is no need of hospitalization, nor disability of any kind. The total absence of shock is a great advantage in inoperable cases.

By means of the implanter the operator is able to place one Removable Radon seed in the center of a tonsil so that radiation is distributed equally throughout. The Radon seed used is filtered by 0.3 mm. of platinum. This filtration cuts off the caustic Beta rays thus doing away with all possibility of burning with consequent necrosis and sloughing.

When the instrument is withdrawn after implantation the seed is left imbedded in the tonsil with a 2 cm. length of thread protruding from the portal entry. This short thread does not in any way inconvenience the patient, nor cause the slightest interference with function. At the end of four days the seeds are easily removed by grasping the thread with forceps.

The point of the trocar is so fine and the seed so small that very little trauma is done to the tonsil.

The amount of radiation can be measured with accuracy and the applicators located with such exactness as to insure equal and complete distribution throughout the tissues. Only one treatment is necessary, a fact much appreciated by the patient. Systemic reactions of any kind never occur. The attached thread, making the seed easily removable when its period of service is over, does away with an objectionable foreign body being left in the tissues—a drawback to the bare tube method. The author concludes that in the implantation of removable Platinum Radon seeds we have at present an adequate substitute for tonsillectomy in those cases where surgery is, for any reason, contraindicated.

The technic and method described in the article has been developed by Dr. Joseph Muir of New York.

EDITORIAL PARAGRAPHS

The next annual meeting of the Nebraska State Medical Association will be held at Lincoln, May 10, 11, 12.

If you care anything about how the Nebraska State Medical Association is functioning, do not fail to read the report of the councilors' annual meeting in this issue.

Dr. Antonio Grossich, surgeon of Fiume, is dead at the age of 77. It was he who originated the method of sterilizing the skin, preoperatively, by painting with tincture of iodin.

A new product called Narcosan, a supposed specific for the drug habit, is being experimented with at present. It is suggested that the profession may well beware of the product until further reports fully justify the contention of the promotors.

Whether a doctor who examines a prospective bride and pronounces her free from tuberculosis is liable to the husband if she develops tuberculosis in less than six months after marriage is a question likely to be determined by the courts ot North Carolina.

The University of Arkansas Radiophone Station K U O A has inaugurated a Medical Extension Service. Every Thursday evening at 8 o'clock a special paper on medicine or surgery or allied subjects will be broadcasted. Papers on the program for February are by W. J. Mayo, F. M. Pottenger, McKim Marriot, Lewellys Barker.

"Steps Toward Drug Therapy in Diabetes", a two-column editorial in *J. A. M. A.* for January 1, 1927, brings us the information that we are probably on the eve of a discovery that will make it possible to treat the hyperglycemia of diabetes by the stomach administration of the drug. It seems certain that such a drug has been discovered; it but remains to find a method of reducing its toxicity.

The Union Pacific Railroad System has been awarded the E. H. Harriman Gold Medal for the most conspicuous accident prevention work in America during the last year. Not a passenger was killed on this system during 1925; twenty-four men were killed in train service accidents; only five employees were killed in non-train, including shop, accidents.

An innovation in facilities for hospitalization of unfortunate travellers is announced by the new Palmer House, Chicago. An eleven room suite has been designed and equipped and set apart for hospital purposes so that it compares favorably with other industrial hospitals in the country, and is under the supervision of an eminent physician. Without a doubt many other hotels of considerable size will soon follow the example set by the Palmer House.

Mr. William Lawrence Saunders, a wealthy New York man of affairs, has through the American Socity for the Control of Cancer, offered fifty thousand dollars to any person or group of persons who may discover what human cancer is and how it can positively be prevented, and fifty thousand dollars to any person or group of persons who may discover an absolute cure for cancer. In making this proposition he has in mind that discoveries are not always made by experts; that physicians are not always the best research workers; that through the lure of a reward, this serious problem might be solved through the genius of a lay mind, by chemists or through unknown and unorganized medical sources.

In Michigan a chiropractor resisted the Medical Practice Act requiring examination in the basis sciences, on the grounds that it is unconstitutional, unreasonable, arbitrary and violates the Fourteenth Amendment. When the case reached the Supreme Court that body set down the following dictum:

> "It is within legislative power to require persons practicing treatment of human ailments or diseases without the use of drugs to possess knowledge of organic structure, intimate structure of tissues, embryonic evolution, functions of the body, molecular and atomic structure of bodies, micro-organisms, science of diseases, morbid processes observable in various diseases of organs, recognition of disease by its symptoms, science of health, and effort made and measures and precautions deemed advisable for the promotion and protection of public health. This power has been exercised, and the regulation provided must stand, unless violative of rights guaranteed by the state or the federal Constitution. We find no limitation upon the subject in the state Constitution. We can conceive of no deprivation of the equal protection of the law in requiring drugless healers to understand the subjects mentioned. The fact defendant has not received instruction in some of these

subjects offers no objection to the validity of the law. We decline to indict the medical profession of design to annihilate the system of chiropractic adjustment and the Legislature of supinely surrendering the lawmaking power in aid thereof. It may be that no chiropractic school teaches all the subjects mentioned, and chiropractors feel that a knowledge thereof is unnecessary and unused in their school of practice, but this affords no reason for requiring the Legislature, in recognition thereof, to enact no law not in conformity therewith."

A BILL FOR AN ACT TO ESTABLISH A STATE BOARD OF EXAMINERS IN THE BASIC SCIENCES, TO PROVIDE FOR ITS ORGANIZATION AND POWERS, TO PROVIDE THAT CERTIFICATION BY SUCH BOARD BE A PREREQUISITE TO ELIGIBILITY FOR EXAMINATION FOR LICENSE TO PRACTICE THE HEALING ARTS, AND TO DEFINE THE HEALING ARTS; AND TO AMEND SECTIONS 8161 AND 8172 OF THE COMPILED STATUTES OF NEBRASKA FOR 1922 AND TO AMEND CHAPTER 155 LAWS OF NEBRASKA FOR 1923 AND TO REPEAL SAID ORIGINAL SECTIONS.

Be it Enacted by the People of the State of Nebraska:

Section 1. **Basic Science Certificate Required.** No person shall be eligible for examination or permitted to take an examination for a license to practice the healing art or any branch thereof, or granted any such license, unless he has presented to the Department of Public Welfare a certificate of ability in anatomy, physiology, chemistry, bacteriology, pathology, and hygiene (hereinafter referred to as the basic sciences), issued by the State Board of Examiners in the Basic Sciences.

Section 2. **The Healing Art Defined.** For the purpose of this Act, any license authorizing the licentiate to offer or undertake to diagnose, treat, operate on, or prescribe for any human pain, injury, disease, deformity, or physical or mental condition is a license to practice the healing art.

Section 3. **Board of Examiners in the Basic Sciences; Appointment and Personnel.** The Department of Public Welfare shall appoint a State Board of Examiners in the Basic Sciences (hereinafter referred to as the Board), consisting of five members, who shall be appointed one for one year, one for two years, one for three years, one for four years, and one for five years. Upon the expiration of the term of any member, the Department of Public Welfare shall fill the vacancy by appointment for a term of five years. Upon the death, resignation, or removal of any member, the Department of Public Welfare shall fill the vacancy by appointment for the unexpired portion of the term. Every member shall serve until his successor is appointed and qualified. The members of the Board shall be selected because of their knowledge of the basic sciences aforesaid. No member of the Board shall be actively engaged in the practice of the healing art or any branch thereof.

Section 4. **Organization of Board: Election of Officers, Seal, Rules, Compensation.** The Board shall meet and organize as soon as practicable after appointment. It shall have power to elect officers, to adopt a seal, and to make such rules as it deems expedient to carry this Act into effect. Each member of the Board shall receive Ten Dollars per diem and actual expenses, when actively engaged in the discharge of his duties. The compensation of the members and the other expenses of the Board shall be paid out of the fees received from applicants.

Section 5. **Fees Payable by Applicants.** The fee for examination or any re-examination by the Board shall be Ten Dollars. The fee for the issue of a certificate by authority of reciprocity, as provided herein, shall be Fifteen Dollars. All fees shall be paid to the Department of Public Welfare by the applicant at the time of filing application.

Section 6. **Examinations.** The Board shall conduct examinations at such times and places as it deems best. Every applicant, except as hereinafter provided, shall be examined to determine his knowledge, ability and skill in the basic sciences. The examination shall be conducted in writing, but may be supplemented by an oral examination, and if practicable may be supplemented by examination in the laboratory and dissecting room. If the applicant receives a credit of seventy-five per cent or more in each of the basic sciences, he shall be considered as having passed the examination. If the applicant receives less than seventy-five per cent in one subject and receives seventy-five per cent or more in each of the remaining subjects, he shall be allowed a reexamination in such subject at the examination next ensuing, upon appication and the payment of the prescribed fee. If the applicant shall receive less than seventy-five per cent in more than one subject, he shall not be re-examined within the period of one year next following his original examination nor unless he presents proof satisfactory to the Board of additional study in the basic sciences sufficient to justify re-examination, and he shall be required to be re-examined in all subjects.

Section 7. **Requirements for Certificate.** No certificate shall be issued by the State Board of Examiners in the Basic Sciences unless the person applying for a cretificate submits evidence satisfactory to the Board that (1) he is not less than twenty-one years of age; (2) he is a person of good moral character; (3) he was graduated by an accredited high school or school of similar grade, or possessed educational qualifications equivalent to those required for graduation by such an accredited high school before he began the study of the healing arts; and (4) he has a comprehensive knowledge of the basic sciences as shown by passing the examination given by the Board, as by this act required.

Section 8. **Reciprocity.** The State Board of Examiners in the Basic Sciences may in its discretion waive the examination required by Section 7 when proof, satisfactory to the Board, is submitted, showing that the applicant has passed the examination in the basic sciences before a board of examiners in the basic sciences or a board authorized to issue licenses to pratice the healing arts in another state, when the requirements of that state are in the opinion of the Board not less than those provided by this act, and if such state grants like exemption from examination in the basic sciences to persons granted certificates by the Board of this state.

Section 9. **Appeal from Board's Decision.** Any applicant who has been denied examination by the Board may, within thirty days after such denial, appeal to the District Court of Lancaster County; and such court shall upon such appeal inquire into the cause of such denial. If in the opinion of the court admission to examination was refused without just cause, the court may order the Board to examine the applicant. Notice of an appeal from the denial of the Board of the right to examination shall be served by leaving with the secretary of the Department of Public Welfare an attested copy thereof within thirty days after said Board has notified the applicant of its refusal to examine him. Hearings of such appeals shall proceed in accordance with such rules as the court may determine.

(The Bill contains in all, 22 chapters, but the foregoing contains the germ of the whole bill. Editor.)

THE NEBRASKA ASSOCIATION OF MEDICAL WOMEN

The Nebraska Association of Medical Women met for Dinner and Program, Saturday evening, Nov. 20th, at the Lincoln Hotel, Lincoln, Nebr., this being the time of their regular semi-annual meeting. The day and evening being threatening and stormy, many from over the state were prevented from attending. Instead of the program which is usually rendered, consisting of a few long papers, each had been requested to prepare a short talk on a subject of her own choosing. The speakers and topics were as follows:

Dr. Daisy M. Hanson, "Sedimentation Test and Standardization of Hospital Technicians."

Dr. Margaret Hammond, "Ultra Violet Rays and Rachitis."

Dr. Emilia Brandt, brought a letter from Dr. Olga Stasney, in regard to co-operation with the National Medical Women's Association.

Dr. Nancy Catania, "Use and Abuse of Iodin in Hyperthyroidism."

Dr. Marie Grothe, "Signs of Mental Defection in Childhood."

Dr. Ruth Warner, "The Interstate Post-Graduate Conference," recently held in Cleveland, Ohio; also "Indications for X-ray and Radio-Therapy in Tumors of Uterus."

Dr. May Flanagan, "Malarial Therapy in Paresis."

Dr. Alace Kani, "Importance of High Diastolic Blood Pressure and Its Therapy."

Dr. Isobel MacDonald, "Medical Education in Scotland."

Dr. Inez Philbrick, "Expansion Program of Medical College for Women in Philadelphia."

Dr. Alma Chapman, "Needs of the York Reformatory for Women."

All except Dr. Brandt and Dr. Kani, of Omaha, are residents in Lincoln.

Every one felt that enough information and inspiration had been derived from the meeting to compensate for the effort of coming out on such a bad night.

MATERNAL MORTALITY IN OMAHA

Year	Total No. of Deliveries or Total Births	Total No. of Maternal Deaths Age 15-47	Puerperal Deaths	Maternal Death Rate Per 1000 Deliveries	Relationship of Puerperal Group to Other Causes of Death in Age Limit Group
1921	5044	326	44	8.7	Puerperal 1st Place
1922	4819	375	42	8.9	" 3rd "
1923	4874	355	33	6.7	" 4th "
1924	5415	319	17	3.1	" 6th "
1925	4994	361	36	7.2	" 4th "
1926	4472	360	40	8.9	" 4th "

A listing of the causes of death in this series is as follows:

	1921		1922		1923		1924		1925		1926	
1	*PUERPERAL GROUP	44	Cardiac Diseases	43	Cardiac	45	Cardiac	60	Tuberculosis	62	Postoperative	54
2	Tuberculosis	40	Tuberculosis	43	Tuberculosis	40	Tuberculosis	38	Cardiac	54	Pulmonary Cardiac) each	45
3	Cardiac	33	*PUERPERAL GROUP	42	Pulmonary affections	36	Pulmonary affections	27	Postoperative	42	Tuberculosis	43
4	Peritonitis	29	Pulmonary Diseases	36	*PUERPERAL GROUP	33	Cancer	26	*PUERPERAL GROUP	36	*PUERPERAL GROUP	40
5	Cancer	24	Cerebral Diseases	31	Postoperative	30	Postoperative	23	Pulmonary	32	Cancer	35
6	Postoperative	24	Postoperative	28	Cancer	27	*PUERPERAL GROUP	17	Accidental	32	Nephritis	13
7			Cancer	27	Peritonitis	27			Cancer	29		
	Total No. of Deaths from All Causes	326		375		355		319		361		360

Preliminary figures indicate a total death rate for the United States for the calendar year 1924 of about 11.9 per 100 as compared with 12.4 in 1923, with 17.6 in the registration areas in 1900 and with 19.8 in 1880.

Birth rates in 25 states show an increase from 22.3 per thousand population in 1923 to 22.5 in 1924. The rates varied from 31.6 in North Carolina to 16.1 in Montana.

While infant mortality has shown an appreciable decrease, the number of deaths of mothers incident to child-birth has shown but little change in the last nine years for which data is available. During the period from 1915 to 1922 inclusive, it is estimated that for every 100,000 babies that were born, the lives of from 600 to 900 mothers were sacrificed. About one-third of these deaths were caused by infection of the mother at childbirth, often the result of carelessness on the part of the attendant. This rate per 1000 births would be 6-9.

(Health news from the United States Public Health Service. B-47.)

This country still loses each year nearly 20,000 women, nearly all of whom are young, from the complications of pregnancy and the accidents of labor. Probably 85% of these deaths are preventable. For this prevention great obstetric skill and judgment is not always needed. In most cases simple prenatal care, careful asepsis and a reasonable knowledge of obstetrics would suffice. It is the mission of the Joint Committee of Maternal Welfare to try to decrease this mortality.

—Earl C. Sage.

AMERICAN COLLEGE OF PHYSICIANS

Announcement is made that The American College of Physicians will hold its Eleventh Annual Clinical Session in Cleveland, Ohio, February 21-25, 1927. Dr. Alfred Stengel of Philadelphia is President of the College and Dr. John Phillips of Cleveland is the Chairman of the Program Committee. The program will be of unusual interest to Internists, (including Neurologists, Pediatrists, Roentgenologists, Pathologists, Dermatologists, Psychistrists and others engaged in the field of Internal Medicine). The Cleveland hospitals and the Western Reserve University will co-operate with the College in the presentation of the program. These programs constitute each year a post-graduate week on Internal Medicine of outstanding merit.

During the mornings, there will be clinics and demonstrations at the various hospitals and in the laboratories of the Western Reserve University; during the afternoons, papers on various medical topics will be delivered by local members of the profession and by members of the College from other parts of the United States and Canada; during the evenings, there will be formal addresses by distinguished guests, American or foreign, and by the President or other representative of the College.

The American College of Physicians is a national organization in which Internists may find a common meeting ground for discussion of the special problems that concern them and through which the interests of Internal Medicine may have proper representation. Membership in this organization is limited to those in the field of Internal Medicine. While it is not a limited national society of specialists (mostly prominent medical teachers), it is not coordinal with large national or sectional organizations of physicians requiring no special professional qualifications. Its standards are high and many men of distinction in the profession are numbered among its members.

An invitation has been extended by the College to all qualified physicians and laboratory workers to attend the Cleveland Clinical Session. An attendance in excess of fifteen hundred is anticipated.

Dr. Adolph Sachs, Omaha, is Governor, for the state of Nebraska.

HELP TOWARD A FUNGUS DISEASE EXHIBIT

Dr. M. J. Wohl has been asked by the Committee on Section Exhibit of the American Medical Association, to participate in a demonstration of fungus diseases with reference to their occurrence in the State of Nebraska, at the annual convention of the American Medical Association in Washington, D. C.

He will, therefore, appreciate it, if any physician in Nebraska who has photographs of patients or cultures of lesions, will kindly send them to either Dr. M. G. Wohl, 517 City Nat. Bk. Bldg., Omaha, Nebr.; or Mr. P. M. Bancroft, Dept. of Pathology, University of Nebraska, Omaha, Nebr.

THE SOCIETIES

The annual meeting of the **Omaha-Douglas County Medical Society** was held December 14, with Dr. Adolph Sachs in the chair. Drs. J. W. McGee and G. C. Winterson were elected to membership. The by-laws were amended to provide that members who have been in actual practice only five years or less shall pay the sum of $13.00 annual dues; those who have been in the practice of medicine over five years shall pay the sum of $20.00.

Dr. H. M. McClanahan gave an illustrated travelogue on his visits to the Orient and the Holy Land.

Dr. Frank Conlin was elected president, Dr. A. P. Overgaard, vice president, and Dr. Earl Sage was re-elected secretary-treasurer. Dr. H. B. Hamilton, Floyd Clarke, F. W. Heagey, J. M. Patton, C. C. Tomlinson, R. W. Fouts, and J. W. Duncan, were elected delegates.

At the annual business meeting of the **Lancaster County Medical Society** held December 6, 1926, officers were elected as follows: Dr. E. W. Rowe, president; Dr. Ray Hummel, vice president; Dr. A. D. Munger, reelected secretary; Dr. Geo. Walker reelected treasurer; and Dr. Geo. W. Covey and Dr. H. H. Waite were elected delegates to the Nebraska State Medical Association for the period of two years. Drs. J. J. Hompes and Stanley Clements were elected alternate delegates for a period of two years. Dr. W. O. Colburn was reelected censor for a period of three years. Dr. B. F. Bailey was reelected a member of the executive council for a period of six years. Dr. A. B. Mitchell was reelected historian for a period of one year.

Regular meeting of the **Lancaster County Medical Society** was held January 4, 1927 at the Orthopedic Hospital, Dr. E. W. Rowe in the chair. After the meeting was called to order Dr. Rowe spoke informally, as the new president, expressing his apprection of the election to the office.

Dr. George W. Covey presented the first paper of the evening, entitled "Protoazoan Parasites in the Intestine of Man." This essay was a supplementary report of the twelve cases in addition to the nine cases previously reported in the Nebraska State Medical Journal for June 1926, making a total of 21 cases of Protoazoan Parasites in the Intestine of Man observed over a period of two years.

In these cases the essayist reports the following types of parasites: Entamoeba-histolytica, Chilomastrix and Giardias. These cases of protozoan infection have fallen into two groups, the Arthritic group and the Colon group. Sixty-six and two-thirds per cent of the reported cases present symptoms predominantly arthritic in character. In each of these cases more or less extensive arthritis of the deformans type have been present for from eight months to fifteen years. Two cases of amoebic infestation have bowel symptoms, of these, one case had chronic dysentery for a period of about three years, infected with the Entamoeba-histolytica. The second case was that of a woman with both the amoeba and giardia, and it is the opinion of the essayist that the more he sees of these infections the more firm he is in the belief that these infestations do cause disease. In conclusion, the essayist states further that the infection of the human intestine by protozoan parasites is common in Nebraska; that these manifestations fall into two groups namely, arthritis deformans type, and the chronic dysentery type, that these organisms do produce disease which can be determined if careful search be made in warm fresh stools.

As to the treatment, storvasal and emetine are proficient in this infection.

In the discussion of this paper Dr. H. H. Waite evidenced the belief with the essayist that these parasites do cause disease; Dr. J. M. Mayhew spoke of his pioneer work in this field and reviewed a resume of six cases with arthritic manifestations.

In the second paper of the evening Dr. H. B. Mueller presented an essay on "Anemias in Childhood." The Doctor prefaced his paper with a short review on the anemias occurring during childhood. Not every pale looking child is anemic. Every true anemia during childhood is a serious condition and needs medical attention. The true anemias are grouped as follows:

1. Alimentary anemias.
2. Post-infectious anemias.
3. Hemorrhagic anemias.
4. Congenital anemias and anemias resulting from rare blood conditions.

Dr. Mueller elaborated upon the recognition and care of the patient in the true anemias. The paper was variously discussed.

The annual meeting of the **Madison County Medical Society,** including as a working unit also, Stanton, Pierce and Antelope counties, was held over a dinner at the Hotel Norfolk, on the evening of January 4th.

Dr. Frank Salter, Pierce, was elected president, and Dr. E. L. Brush, Norfolk, was re-elected secretary-treasurer and also delegate for Madison County. Pierce and Antelope counties having the requisite number of physicians in each county to form a unit of organization elected delegates as follows: Pierce county, Dr. A. E. Benthack, Pierce; Antelope county, Dr. J. H. McCarthy, Elgin.

Dr. George Hanson, Madison, presented a case of an eruption at the root of the nose in a young man for diagnosis by Dr. Tomlinson, who pronounced it lupus erythematosis. Dr. A. C. Barry, Norfolk, presented two cases of tularemia—one in the active stage and one recently cured.

Dr. C. C. Tomlinson, Omaha, guest of the evening, gave an address illustrated by lantern slides, on the "Diagnosis of Diseases of the Skin." All the doctors' wives present attended the scientific session.

The annual business meeting and banquet of the **Dodge County Medical Society** was held at the Hotel Pathfinder, Fremont, December 27th. Dr. R. T. Van Metre, Fremont, was elected president, Dr. J. S. Devries, Fremont, was re-elected secretary-treasurer and Dr. W. J. Davies, Fremont delegate.

About forty persons, including the wives of the physicians, were present. A Christmas Tree, beautifully decorated, was in the room and there was a present for each person attending. A Christmas program featured the meeting.

At the annual meeting of the **Gage County Medical Society** held at Beatrice, January 4, Dr. D. E. Haworth, of Wymore was elected president, Dr. F. W. Buckley, secretary-treasurer and also delegate. The society went on record as favoring a universal basic practice act.

The annual meeting of the **Saline County Medical Society** occurred at Crete on the evening of December 20. The following officers were elected: President, Dr. F. J. Stejskal, Crete; vice president, Dr. A. A. Conrad, Crete; secretary-treasurer, Dr. H. W. Quirk, Crete; delegate, Dr. H. W. Quirk. Dr. R. C. Kirchman who recently moved from Dodge to Wilber, was admitted to membership by transfer. Medical legislation and medical welfare work was the topic of discussion at the meeting.

The annual meeting of the **Scottsbluff County Medical Society** was held at Scottsbluff, December 9, Dr. W. P. Hodnett, was elected president, Dr. J. B. Schrock, secretary-treasurer (re-elected).

HUMAN INTEREST TALES

Dr. Frank Conlin, Omaha, recently submitted to a goiter operation.

Mrs. Adolph Sachs, was elected president of the Omaha Doctors' Wives' Club.

Dr. and Mrs. H. Gifford, Omaha, are spending part of the winter in southern Arizona.

The Platte Valley Hospital, North Platte, has been moved into the Wesleyan University Building.

Dr. E. C. Peterson and Miss Lena Jane Finley, Omaha, were married at St. Louis, December 18th.

Dr. Hardin S. Tennant of Pawnee City and Mrs. Zira Steckleberg of Madison were married in Omaha, December first.

Dr. H. W. Orr, Lincoln, gave the first annual Mayo Foundation lecture on orthopedic surgery at Rochester, Minn., January 25th.

Dr. G. O. Remy, Ainsworth, attended the Northwestern Surgical meeting and visited his son, Dr. Chas. Remy, in December.

Dr. James Lovely, Creighton graduate, practitioner at San Jose, Calif., was recently married to Miss Louise Billeuo, of San Jose.

Dr. G. E. Pennington, Broken Bow, attended the meeting of the Radiological Society of North America at Milwaukee, in December.

Dr. H. H. Stretton, Chester, experienced the thrill of having his new Buick turn over and get wrecked while he sustained but minor cuts and bruises.

Dr. C. C. Drummond, lately of Lincoln, but formerly for 29 years a medical missionary in India, has taken a position at the Hastings State Hospital.

Dr. J. P. Gilligan, Jr., for some time connected with the Lord and Schrock clinic at Omaha, has acquired the office and equipment of the late Dr. S. S. Wilson at Nebraska City.

Dr. H. M. McClanahan, Omaha, is on a winter voyage that takes him from New York south to Buenos Aires, across to Cape Town, up the east coast of Africa and home through the Suez Canal and Mediterranean. He left Omaha early in January.

The sentence of Dr. John T. Mathews, aged Omaha physician, in prison the past two and one-half years for committing an abortion with fatal results, was communted by the board of pardons and he was released December 23.

The Pre-Medic young women of the Nebraska State University, entertained the Nu-Medic young men at a dinner at the Grand hotel, December 16. Addresses were made by Dr. T. J. Thompson, Dr. Hattie Plum Williams, Dr. May Flanagan, Dr. Isobel MacDonald and Dr. W. H. Wolcott.

Dr. Inez Philbrick, of Lincoln, attended a conference in Philadelphia, in November, of alumnae, faculty, and board of corporators, in furtherance of the plans for the re-building on a new and beautiful site five miles from the center of the city, of the Greater Woman's College of Pennsylvania. Alumnae were present from many parts of the country. 1646 graduates have been sent out by the College since its first class graduated in 1852. Of these 1132 are living, and are practicing in almost every country of the world. A large proportion of the women missionaries in foreign lands have been sent out by this College. The Greater Woman's Medical College will specialize on obstetrics and public health.

NECROLOGY

Charles O. Robinson, Beatrice. Nebr.; University of Pittsburg School of Medicine, 1891; practitioner at Beatrice about 3 years, succeeding to the office equipment of the late Dr. A. V. Robinson; previous to that a practitioner at Tulsa, Okla.; died in an Omaha hospital, December 23, after an illness of several months, aged about sixty-one years.

BOOKS RECEIVED

TREASURY—ANNUAL REPORT FOR 1925 — U. S. Public Health Service, by A. W. Mellon, Secretary of Treasury. 14 mo. Cloth. 314 pages. Washington Government Printing Office, 1925.

THE MEDICAL DEPARTMENT OF THE UNITED STATES ARMY IN THE WORLD WAR. Vol. XV, Statistics. Part II. Medical and Casualty Statistics. Prepared under the direction of Major-General M. W. Ireland, the Surgeon General. 16 mo. Cloth. 1368 pages. Washington Government Printing Office, 1925.

THE ROCKEFELLER FOUNDATION — ANNUAL REPORT FOR 1925. 18 mo. 521 pages with illustrations.

SHELL SHOCK by Norman Fenton, Ph. D. 14 mo. Cloth. 173 pages with illustrations. Price $3.00. C. V. Mosby Co,. St. Louis, 1926.

PRACTICE OF PREVENTIVE MEDICINE by J. G. Fitzgerald, M. D., L. L. D., F. R. S. C. 8 mo. 791 pages. Cost $7.50. C. V. Mosby Co., St. Louis, 1926.

PHYSIOLOGY AND BIOCHEMISTRY IN MODERN MEDICINE by J. J. R. Macleod, M. D., L. L. D., (Aberd.), D. Sc. (Tor.), F. R. S. 8 mo. Cloth. 1054 pages with 291 illustrations, including 9 plates in color. Price $11.00. C. V. Mosby Co., St. Louis, 1926.

DISEASES OF WOMEN by Harry Sturgeon Crossen, M. D., F. A. C. S. 8 mo. Cloth. 1005 pages with 934 engravings including 1 plate in color. Cost $11.00. C. V. Mosby Co., St. Louis, 1926.

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GOITER*

BYRON B. DAVIS, A. B., M. D., F. A. C. S.,
Omaha, Nebraska.

Plummer says: "The function of the human thyroid under normal conditions is to maintain approximately 14 mg. of thyroxin in the tissues of the body". There may be, and probably are, other functions, but the elaboration of thyroxin is known definitely, the rest are conjectural.

WHY IS A GOITER?

The normal condition of a normal individual with abnormal thyroid and with sufficient ingestion of iodine, I conceive to be about as follows: The tissues are being supplied regularly with enough iodine to maintain the required 14 mg. of thyroxin distributed fairly uniformly. When by the destruction and elimination of thyroxin, its supply is diminished below that point, more is drawn from the stored-up supply in the thyroid and this supply is made good by the elaboration of more thyroxin by the thyroid gland. The gland simply plays along, is not overworked; is under no stress. Its physiological function is exercised only at intervals and for the most part it is resting. Such a gland never hypertrophies. It pursues the even tenor of its way easily and normally.

Now suppose there is not a sufficient amount of iodine ingested to meet the requirements. Soon the amount of thyroxin in the body tissues is reduced to less than 14 mg.; the tissues cry out loudly for more thyroxin. This stimulates the thyroid to intense activity. It strives desperately to extract from what iodine compounds come its way enough to elaborate the thyroxin needed to meet the demands. In spite of all its efforts there is not enough iodine to satisfy the needs of the tissues. Instead of being physiologically active a few hours of the day with long intervals of rest, it is intensely active all the time; and instead of working easily and naturally, the work is carried on under stress. Like all overactive organs and tissues more blood flows to the part and hypertrophy results.

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*Read before the joint meeting of the Third and Seventh Councilor District Medical Societies, Beatrice, September 29, 1926.

This is my conception of about what takes place in every simple endemic or adolescent goiter; and, when the condition continues long enough, colloid goiter and sometimes adenomata of the thyroid result. If at anytime early in the process a sufficient amount of iodine is administered the process is checked, and in many cases the thyroid reverts to its natural size and normal condition.

Now suppose after a thyroid has become much larger than normal with a greatly increased working capacity, the ingestion of iodine is increased excessively through accident or design; the superactive thyroid seizes upon its oversupply and elaborates thyroxin in great excess over the normal requirements. The tissues become supercharged with thyroxin, the basal metabolism is high. The thyroid has reached such a size and capacity for work that it does not respond to the usual inhibitions and the condition we know as hyperthyroidism exists. This explains why an adenoma treated by iodine often becomes toxic.

Exophthalmic goiter is a different matter and must be explained in a different way. The ultimate cause is entirely different from that of the types we have been considering. There is no iodine deficiency. Some evil influence seems to be exerted over the thyroid. The product elaborated is not normal thyroxin, but a perverted thyroxin which greatly increases tissue waste as shown by the high basal metabolism and rapid loss of weight. The thyroid and the tissue requirements are in a state of imbalance. The probability is strong that an infective process is a frequent cause of the dysfunction. The tissues suffer not from an excess of normal thyroxin, but from a thyroxin containing a harmful element. That this is true is suggested by the fact that if Lugol's solution is administered in full doses, the basal metabolism is quickly lowered, the heart becomes slower and less tumultuous, the nervousness quiets down, and there is a complete transformation from a condition of extreme wretchedness to a state of relative well-being. Why Lugol's solution has such an effect has not been clearly explained but it is conjectured that the iodine in Lugol's solution is so easily converted into normal thyroxin that even the diseased thyroid is capable of making the elaboration. That the normal physiology of the gland is not restored is proven by the fact that as soon as the administration of Lugol's solution is stopped the basal metabolism again rises, tachycardia returns, and the nervous symptoms become as bad or worse than before.

HISTOLOGY AND PATHOLOGY

The normal thyroid is constituted of vesicles lined with cuboidal or low columner epithelium. The follicles are filled with colloid.

The pathology of the thyroid will be touched on lightly in this brief paper. Simple hypertrophy is characterized by enlargement of the follicle and an increase in the size of the cells. In hyperplasia, the condition found in Graves' disease, the cells are increased in number. In adenoma of the thyroid there is a great increase in the number of the acini.

CLASSIFICATION

If we simply divide goiters into two classes: (1) Endemic, (2) Exophthalmic, the ground is really covered. Colloid goiter and adenoma of the thyroid are only later forms of the endemic—the conditions which produce the endemic goiter being continued. This does not apply to faetal adenomata which are congenital.

SYMPTOMS

In general we have to deal with two classes of symptoms, one purely mechanical, manifested by disturbances due to pressure on important structures: The second due to too little or too much or abnormal thyroid products.

The mechanical symptoms are as varied as the structures that may be involved. The amount of disturbance from pressure is not by any means proportional to the size of the goiter. For instance there may be a small extension of thyroid tissue between the trachea and oesophagus, and result in dysphagia even when slightly enlarged; or the thyroid may be only slightly enlarged, but if there is fibrosis it may result in flattening the trachea with difficulty of breathing.

As a rule the large goiters are more likely to produce scabbard trachea and often the pressure may be at different levels resulting in an S-shape form of the trachea. These patients sometimes suffocate in their sleep.

Interference with the laryngeal nerves is very frequent. A laryngeal examination is wise in every case for two reasons: (1) Because it is important to know. (2) Because, if operation is followed by paralysis of the vocal cords it is most important from a medico-legal standpoint that it be known whether the condition is the esult of the operation or is the result of the oiter.

Intrathoracic goiters are relatively frequent. ometimes they occur in very large goiters and ometimes those only moderately enlarged are arried into the thoracic cavity by gravity. They may cause pressure on the heart and interfere with its smooth action; or by pressure on the reat vessels produce congestion or anaemia of he brain. Sometimes there is definite pressure n the lungs resulting in dyspnoea.

The ordinary endemic goiter is usually sympomless and manifests itself only by the presence f an enlarged thyroid. But even here the patient is often noticed to be more nervous and rritable than normally and there is sometimes moderate increase in the metabolic rate. The ame may be said of the diffuse colloid goiter nd of the non-toxic adenoma.

Exophthalmic goiter is characterized by a moderate enlargement of the thyroid, soft or irm in consistency, usually with a bruit due to ts extreme vascularity. Sometimes it is expansile like an aneurism. In rare instances he thyroid appears normal in size, but operation hows slight hypertrophy even in these cases. Along with the goiter as just described are the other three cardinal symptoms: Exophthalmus, remor, and tachycardia. Exophthalmus may be absent, but a wildness of expression of the eyes is almost always to be observed. The tremor is a fine one, 7 to 10 per second, always made worse by nervous excitement or exercise. Neurogenic tremors are coarser and not so fast as those due to hyperthyroidism.

The tachycardia of Graves' disease is not much affected by exercise, the reverse of the tachycardia of intrinsic heart disease. The so-called paroxysmal tachycardia is very intense for the few minutes it lasts and when over the heart becomes normal again, while in exopthalmic goiter the heart is always unduly rapid both before and after an attack of tachycardia.

In the early stages of Graves' disease there is almost always a ravenous appetite. A frail woman with exophthalmic goiter will often eat more and still lose weight than a burly laborer who is maintaining and even increasing his weight. The exophthalmic appetite is so voracious that simply seeing the person eat will make the diagnosis.

The victim of exophthalmic goiter can never keep still; the body is constantly changing position; this is true even while sleeping. The sleep is disturbed. The mind is very alert but not able to do logical consecutive thinking. The patient is irritable, excitable and thrown off balance by the most trivial occurrence, such as would not affect a normal person.

The skin is soft and irritable, often pruritic. Profuse sweating occurs after the least exertion and even when there has been no observable exertion.

Later in the disease there are often diarrhoea and loss of appetite, sometimes vomiting.

It is often necessary to differentiate exophthalmic goiter in its lighter forms from neurasthenia, neuro-circulatory asthenia, pulmonary tuberculosis and paroxysmal tachycardia. In neurasthenia the pulse slows down, if the patient is put to rest, and the basal metabolism is not increased.

Neuro-circulatory asthenia is found in those who are below par and often simulates hyperthyroidism very closely. Most of these cases complain of dizziness when they stand and are made worse by the most trivial happenings. They perspire easily, their hearts are irritable, they have visceroptosis. Usually their condition is chronic and there is no history of an abrupt onset as is found in Graves' disease. In asthenia there are no definite crises, while Graves' disease is marked by frequent crises. The basal metabolic rate is of much assistance in making a differential diagnosis. Here the Goetsch test is sometimes valuable. If there is a prompt reaction of considerable intensity after the injection of adrenalin the case is likely one of Graves' disease; if there is no reaction it speaks for neuro-circulatory asthenia.

I have seen some cases of incipient tuberculosis that had been considered as cases of Graves' disease; and have also seen frank exophthalmic goiter develop in patients who had been considered for months to have tuberculosis. Careful study of the case, making a leucocyte count, getting the basal metabolic rate and the use of the Goetsch test and getting a radiogram of the thorax will usually clear up the diagnosis.

In paroxysmal tachycardia the patient will be normal, with a normal pulse rate. Suddenly, without apparent cause, the heart begins to pound very hard, the pulse becomes very rapid, continues thus for a few minutes to an hour or more, then suddenly drops back to normal and the patient feels as well as ever. Such sudden changes do not occur in exophthalmic goiter unless the patient is also subject to paroxysural tachycardia.

In the early stages of exophthalmic goitre there is usually a moderate rise in the systolic blood pressure and the diastolic pressure is somewhat below normal, making the pulse pressure greater than normal.

In toxic adenoma the symptoms are much the same except that the thyroid is nodular, and the goiter has been present a number of years without hyperthyroidism, the hyperthyroidism has come on more gradually and there is no exophthalmos.

It is impossible for a pathologist to take a piece of thyroid to his laboratory and from the gross and microscopic findings, construct a clinical picture that is reliable. Progress is being made but the problem is a big one. The gland can be shown to be hypertrophic, hyperplastic or to contain adenoma; but the picture is so complex in most instances that accurate conclusions are often impossible. It is seldom, this is my opinion, that an uncomplicated colloid or hyperplasia or adenoma is to be found. The hyperplasia is so often engrafted on a simple hypertrophy, adenomata so often develop in an apparently simple diffuse colloid, so often do we find adenomata of the thyroid with patches of hyperplasia, that we are yet unable to make a perfect correlation of the pathology with the symptoms. The frequency of mixed pathology make it next to impossible to say positively in a given case, this is a pure colloid; or this is an uncomplicated adenoma, toxic or non-toxic; or this is exophthalmic goiter and nothing else.

INDICATIONS FOR OPERATION

All, I think, are one in the feeling that endemic goiter or the goiter of adolescence should not be operated. It is true that some of them develop adenomata and some, later, in life, become hyperplastic, but such sequelae are so rare and so remote that they may be disregarded. Medical treatment consisting of iodine in the main with rest to a certain degree will produce recession in many of them and the remainder will become "resting colloids" which are equally innocuous, barring the possible occurrence of adenomata or hyperplasia. Occasionally I have been importuned to remove these harmless endemic or colloid goiters by young ladies in order to restore the symmetry of the neck. Here the mere suggestion of the disfiguration of the scar is usually enough to dissuade them.

When colloid goiters become so large as to be very disfiguring or produce pressure symptoms they should be removed.

On the other hand I am of the opinion that adenomata of the thyroid should be removed whether toxic or not. Every non-toxic adenomatous goiter is potentially toxic. Most of the benign adenomata will become toxic adenomata, if the patient lives long enough. When we consider the serious condition of most of the cases of toxic adenomata when they consult us, and the heart damage they have already sustained, I believe the relatively safe removal of the adenoma before it has become toxic is much to be preferred to the greater risk of its removal after hyperthyroidism has occurred. It must be remembered that nearly every case of adenoma with hyperthyroidism who consults a surgeon has been toxic for months or years and often irreparable damage has been done to the heart muscle from which recovery is impossible.

Exophthalmic goiter is a surgical case as soon as the diagnosis is made, or as soon as the patient can be brought into a favorable condition for operation.

PRE-OPERATIVE MANAGEMENT

Every surgeon who has written on this subject has his own ideas how best to prepare a goiter case for operation. Now, with you permission, I will give mine. But first I want to say there are no hard and fast rules. Individualization of the patient, is probably more necessary in toxic thyroid cases than any other. I never expect the treatment of these cases to be standardized, as for instance, we can standardize our radical breast operations or our herniotomies. The difference with which thyroid patients respond to operative trauma should always be recognized, no matter how thoroughly they have been prepared. We should be ready to interrupt any goiter operation at any stage of its progress, if conditions arise which make it apparent that the patient has reached the limit of tolerance.

Before beginning the pre-operative preparations it is presupposed that all the procedures for reaching a correct diagnosis have been used. In addition to the complete history and clinical examination usually employed in every surgical case, at least two basal metabolism readings are made, each after a twelve hour fast. Many cases operated in the past as non-toxic goiters were really suffering from a moderate degree of hyperthyroidism. Besides the diagnosis of the goiter it is of the greatest importance that the surgeon assure himself of the condition of all the vital organs.

If after making all necessary tests the patient is found to have a non-toxic goiter which needs to be operated, I proceed in the same way as in any other major surgical case, using plenty of fluids including glucose for at least 48 hours before the operation.

In cases of adenoma with hyperthyroidism the patient is put to bed with ice over the neck and over the heart, if very rapid. Absolute rest in bed is enjoined. It is preferred that there be no visitors, that the nurse be quiet and of a reassuring temperament, and I prefer that the room be slightly darkened. There is no specific medication. Of course, no Lugol's solution or iodine in any form is given, as iodine never improves the condition and usually aggravates the symptoms. The basal metabolism is taken at least twice before the regular preparation is begun and about every third day thereafter until it is lowered as much as can reasonably be expected. Sometimes the rest in bed does not cause much lowering of the basal metabolic rate. At any rate we must select the most favorable time for operation by a careful sizing up of the general symptoms, paying especial attention to the condition of the heart and blood pressure, paying due regard to the state of the nervous system and kidneys. In most cases the regimen outlined, giving the patient a non-protein diet free of fat and containing an abundance of carbohydrates, results in a definite reduction of the basal metabolism and a general improvement has reached as favorable a point as can reasonably be expected, and we must not expect too much in the hyperthyroidism of adenoma, the immediate preoperative treatment is begun. The first, last and most important desideratum at this time is to fill the patient's tissues with fluids. The fluids I use are bicarbonate of soda and glucose, with normal saline solution subcutaneously. Every effort is made to supersaturate the patient before operation, because I believe much of the success of the operation depends on guarding against dehydration and its twin brother acidosis, so likely to follow thyroidectomies.

The preparation of patients suffering from exophthalmic goiter is practically the same as that used in the hyperthyroidism of adenoma except in one particular. Thanks to Dr. Plummer, a remedy has been put into our possession which has wrought a revolution in this disease. He pointed out that Lugol's solution possessed the power in exophthalmic goiter to lower the basal metabolism, lessen the heart action, decrease the nervousness, and put the patient into an ideal condition to withstand operation. Ten drops three times daily is the usual dose. During an attack of acute hyperthyroidism the size of the dose of Lugol's solution may be increased to 20 or 30 minutes three to five times daily. In every case in which this treatment has been followed there has been a rapid change for the better, and since beginning its systematic use I have not in a single instance found it necessary to do a ligation of the superior thyroid arteries, a procedure which was carried out in the majority of cases before the advent of Lugol's solution. When the basal metabolism is approaching normal and the heart has become as steady and slow as can reasonably be expected is the psychological moment for operation. It is highly essential not to wait too long, since Lugol's solution will not maintain this good condition indefinitely. In a few cases when the operation has been postponed too long in the vain hope that a still more favorable time for operation might be reached I have been embarrassed by the alarming discovery that the nervousness was increasing, the heart becoming more unstable and the basal metabolism rising.

Two or three points have been very definitely established with reference to thyroidectomies: (1) Never to operate when there is a rising metabolism. I would rather operate when the basal metabolism is +60, if it has just fallen from a +80, than when it is +40 if it has just risen from a +30. (2) Never operate in the midst of an acute attack of hyperthyroidism — in the past many lives have been sacrificed to the neglect of this precaution. If everything is looking well in the evening and it is planned to operate the following morning, if the patient passes a restless night and is worse in the morning, postpone the operation until the conditions are favorable. (3) If the patient is in bad condition on entering the hospital never operate until the condition becomes fairly favorable, no matter how long one has to wait. It is better for the patient to die of the disease than from an operation which would inevitably be fatal. (4) It has been shown that ligation of the superior poles in adenoma never does any good, and since the use of Lugol's solution in exophthalmic goiter, ligation is increasingly rare.

I approach the subject of digitalization before operation with the greatest reluctance. It was formerly my custom to precede most of these operations with the administration of moderate doses of digitalis for two days. This has been done especially when there is auricular fibrilation or any indication of failure on the part of the heart to fully compensate. But when so great an authority as Plummer asserts that the mortality in the Mayo Clinic has been reduced from 3½% to 1% since they stopped giving digitalis for auricular fibrilation, it is like throwing a bomb into the machinery. It seems that Plummer's statement is somewhat weakened because of the fact that about the same time, as far as I can ascertain, that they stopped the use of digitalis they began the systematic use of Lugol's solution in exophthalmic goiter. This makes one wonder if the Lugol's solution does not deserve much of the credit for the lowering of the mortality and that his conclusions about digitalis are faulty. In his article in "Oxford Medicine" Plummer says: " * * digitalis does not affect the increased heart rate due to the elevated metabolism but only influences that secondary to fatigue and decompensation." Personally I do not believe we can always determine what the heart mal-function is due to. It is my opinion that digitalis should be used in all cases in which it is indicated from intrinsic heart disease, but when the condition is due wholly to toxic goiter, the action of digitalis cannot be relied on.

IMPORTANT POINTS ABOUT THE OPERATION

No effort will be made to describe the technical steps of the operation. I make no attempt to "steal" the goiter. Dr. Crile has been very successful in his method of operating, when the patient does not know he is to be operated, but I have not heard of any successful imitators. By encouragement and reassurance and gaining the confidence of the patient I feel that he is better off nervously and mentally if no information is withheld.

I am not in favor of local anaesthesia unaided. These patients are unstable and are likely to go to pieces in the first stages of a purely local anaesthesia. Morphine is given 45 minutes before operating. Then a light gas anaesthesia is administered, just enough to produce analgesia. It is now possible to use the local anaesthetic and avoid the terrors of using it unaided. One-half per cent novocaine is the anaesthetic of choice and no adrenalin is used, because of its reaction in hyperthyroid cases. It must be remembered that unaided by adrenalin the analgesic effect of novocaine is very brief, but it is usually long enough, and if its effect begins to die out before the operation is ended, more can be injected.

In thyroidectomy operative gentleness in handling tissues, perfect hemostasis, and a clean dissection are absolutely essential.

The amount of gland tissue to be removed has not been standardized. It depends on the type of goiter and the judgment of the operator. In the early days of thyroidectomies Kocher made a practice of removing the whole gland. This procedure, as we would suppose, resulted in many post-operative myxoedemas. The pendulum then swung to the opposite extreme and much gland was retained. This left many patients as bad as ever, or only slightly improved, and the part left often hypertrophied until it was larger than the entire gland before operation. Of late we are removing much more of the gland, especially in cases of Graves' disease, feeling that it is better to have an occasional case of myxoedema which can be perfectly controlled by thyroid extract, than to have so many cases only partially relieved. In colloid goiters, the function being subnormal, more gland can safely be retained.

Great care is necessary to guard the integrity of the recurrent laryngeal nerves and the parathyroids. If the posterior capsule is left intact and the ligations are done where the vessels enter the gland no trouble is likely to occur. There is often some hoarseness following thyroidectomy, but this is usually due only to trauma of the nerves and the hoarseness is ephemeral. The scar should be so placed as to be inconspicuous as possible.

POST-OPERATIVE MANAGEMENT

When the patient is returned to bed quiet must be maintained the same as before the operation. The room should be kept in a twilight condition. Ice should be kept over the neck and over the precordial region, and if there is a sharp reaction, manifested by great nervousness, a rapid heart, and a rise of temperature, ice should be packed about the patient as is done in heat stroke.

Lugol's solution may be advantageously continued after the operation until the heart is quiet and the condition satisfactory, and 5 or 10 drops of Lugol's solution daily may be used to advantage until the patient is fully convalescent.

Fluids are administered in large quantities subcutaneously until the paitent can take them freely by mouth. It is often advantageous to inject 300 to 500 cc. of 10% glucose intravenously. If I were limited to two remedies in the post-operative care of these patients, they would be fluids by hypodermoclysis and ice externally. As soon as the stomach will bear it a full diet largely made up of carbohydrates should be prescribed.

RECURRENCES

Even when the best judgment, humanly speaking, has been used in the operative procedure, there are bound to be some recurrences of symptoms and of the goiter. A small bit of thyroid tissue left behind in an exophthalmic case may increase in size and act so vigorously that there may be an early return of symptoms as bad as before. These cases should be operated again and the second operation is usually successful, but in rare cases even a third operation has been found nceessary.

In adenomas and colloid goiters more tissue is retained and there can be no assurance that small adenomata may not be left and it is their nature to grow. Such cases may require a second operation.

END RESULTS

The important question with these sufferers is, how completely they will be cured? It has been my experience that most of the cases of toxic goiter and practically all the cases of simple colloid and non-toxic adenomata gain complete restoration to health. A proporiton of the toxic cases are only partially relieved. There seems to be two cardinal causes for persistency of their symptoms. One is that too much thyroid tissue has been left or that what was left has hypertrophied; this may be called a preventable relapse. The other cause of unrelief is more difficult to cope with. These are the ones in which cardiac or other changes had progressed so far before operation that restoration is impossible; or there are other complicating lesions which mere removal of the thyroid will not rectify. Too long delay in operating accounts for poor success in many cases. It must always be remembered that when a weak individual, subnormal nervously with a frail physical make up is relieved of her goiter it does not make a robust woman of her.

FOLLOW-UP ATTENTION

It is wise before discharging goiter patients from the hospital to get their post-operative basal metabolism readings and to make a careful notation on the records of their condition in genreal. It is also an excellent plan to repeat this every 3 to 6 months for the first two or three years. This will give a clear idea of what we are accomplishing. It also gives an opportunity to catch recurrences in their incipiency and do what is necessary before irremediable harm has been done. One thing is certain, we have no right to turn toxic goiter cases out after operation without every precaution being made to guide them back into a condition of normal health.

RECENT VIEWS ON HERPES SIMPLEX*

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In the course of some experimental work on ocular herpes with Dr. S. Lucic, it was necessary to review recent work on herpes in general. A wealth of experimental work was found, opening up interesting relations with other subjects, especially that of encephalitis, and since very little of this work has appeared in the American literature it seemed that a brief resume of recent opinions might not be without interest.

Herpes simplex, or common fever blister, has not until within the last ten years, aroused much scientific curiosity, and its cause was a matter for speculation. Its frequent occurrence during pneumonia, malaria, and common cold, was evidence against any one bacterial cause, and it was variously supposed to be the effect of any exhausting condition, of high fever, etc. As late as 1916 a standard text on skin diseases (Stelwagon) could state: "Herpes is certainly neurotic. It possibly depends on reflex irritation of the neighboring sympathetic ganglia". Bacteriologic investigations threw no light on the subject, as various organisms, staphylococcus, streptococcus, pneumococcus, and others were found, so that the herpetic eruption could apparently be considered only a symptom of reaction to various bacterial toxins.

It was not until 1914 when Gruter found that herpes corneae could be successfully inoculated on the rabbit's cornea, and transferred from rabbit to rabbit without any bacteria being demonstrable in the lesions, that the true nature of the various forms of herpes was surmised. Lowenstein found that herpes occurring on other parts of the body in the course of various diseases was inoculable in this way, producing the same severe lesions without demonstrable bacteria. Any such inoculation conferred immunity on the rabbit's cornea for a time against further inoculations from any other herpes lesion. This was true of various so-called herpetic lesions of the cornea, herpes simplex of the face and lips, and herpes progenitalis. In other words, these lesions were all apparently due to a specific filterable virus whose properties, in the different locations, were identical. Further work by many investigators has verified this idea, so that it may be considered as proven.

The question of the relations between herpes simplex and herpes zoster was now taken up again, and it was found that the lesions of zoster are almost never inoculable on the rabbit's cornea. It is true that Teague and Goodpasture found strains of virus in two cases of herpes zoster which were so inoculable and with which they produced on the skin of rabbits previously painted with tar, typical zonal eruptions. They believed herpes zoster and herpes simplex are both due to the same virus but to strains showing a difference in pathogenicity. There are many irreconcilable differences between the two diseases, however, which make Doerr consider it highly improbable that they are due to the same virus. Such are the well-known clinical facts that herpes simplex is often transmitted by contact, herpes zoster never; that herpes simplex recurrs often or even habitually in certain persons, while herpes zoster seldom occurs more than once in a life-time, one attack apparently conferring lasting immunity. It is quite possible, however, that zoster is also due to a filterable virus, some of whose properties are similar to those of the virus of herpes simplex. In one typical case of herpes zoster seen during this work we made careful inoculations on the rabbit's cornea from a fresh lesion, with negative results.

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The most distinctive property of the herpes virus is the constancy with which the characteristic leisons are produced when it is inoculated on the rabbit's cornea. This occurs in almost 100% of inoculations made from fresh herpes lesions. In the cases from which we obtained our material, all those of herpes labialis gave positive results, while several lesions of the cornea, dendritic ulcers, were negative, probably not being seen early enough. Others, however, (Lowenstein, Friedenwald, Gruter, etc.), have obtained uniformly positive results from dendritic ulcer, keratitis punctata vesiculosa, and other corneal lesions considered herpetic. The resulting lesions do not contain ordinary pathogenic organisms, and though Kooy and others have reported finding a bacillus constantly in cultures, it seems to have been a secondary organism, as it has not been found by other observers. Berkfeld filtrates of the material give positive inoculations (Bencini and others). The virus has been obtained from the saliva of persons subject to habitual herpes, and also from that of normal persons. This prevalence of the virus in a latent state explains the frequency of herpes lesions, especially during any disease which lowers resistance. It has also been found by Gruter on the normal conjunctive, where it might easily arrive by the tear passages, and whence it may be inoculated by some slight traumatism to the cornea. Busacca has recently investigated the conjunctival sacs of himself and a colleague, both habitual sufferers from herpes labialis. By concentrating the lacrimal secretion (obtained in periods when no herpes was present) he isolated a virulent herpes virus which gave positive inoculations. Several human eyes have been inoculated positively with herpetic material, as from skin herpes by A. Fuchs and Lauda and from inoculated rabbits by Gruter and others.

One of the most striking properties of the virus is its tendency to travel from the primary site of inoculation along the sensory nerve to the central nervous system. This is shown by the occurrence in a fairly large percentage of inoculated animals of a definite encephalitis. The animals turn toward the inoculated side, develop convulsions and opisthotonos and often die in four to six days. Paralysis of the extremities is noted, usually in the more chronic cases which do not end fatally. The brains of these animals show signs of an intense encephalitis which resembles in its histopathology the picture of lethargic encephalitis in man. Material taken from the supposed course of the infection, the Gasserian ganglion, or affected parts of the brain, gives positive inoculations. About one-third of our inoculated animals developed signs of encephalitis, of which about one-third died. Material from the brains of several of these produced positive corneal lesions. Such material also produces encephalitis when injected intra-cerebrally, in about 100% of cases. Encephalitis occurs not only after corneal and cerebral inoculations, but also after inoculations made intra-venously, the virus lodging in the terminal cerebral vessels, and subcutaneously in which case it travels by the nerve to the cord or brain, where the lesions are produced, both cases showing the marked neurotropic property of the virus. Another striking instance of the neurotropic properties of the virus is seen when it is inoculated in a pouch made beneath the ciliary body as was done by Von Szily. An intense uveitis develops, the virus reaches the optic nerve, travels along it to the optic tracts and brain and in about ten per cent of inoculated animals crosses by way of the chiasm to the other optic nerve and eye, producing an equally severe uveitis, which gives a histologic picture greatly resembling that of sympathetic ophthalmia. In our work we were able to confirm this and to produce corneal lesions with material obtained from nerves, chiasm and the secondarily affected eye. This neurotropic property, so marked when the virus is inoculated in rabbits, is apparently not marked in its natural human host. Here it is predominantly epidermotropic. The spinal fluid of persons with various herpes lesions has, however, been shown by Bastai and Busacca to contain herpes virus. Others have failed to confirm this, but if true, it indicates that the virus follows the same course to the central nervous system in man, without, however, producing clinically demonstrable lesions. These authors even inoculated two patients intraspinally with herpes virus and were able to demonstrate it in their spinal fluid by positive corneal inoculations three months later.

While no general immunity to herpes simplex occurs, many patients, in fact, being subject to recurrent attacks for a life-time, a local immunity does occur, an inoculated cornea being resistant to subsequent inoculations for three to five months. The same localized immunity occurs in the brain as was shown by Levaditi and Nicolau, who found that when the brain of an animal recovering from herpes encephalitis was mixed with active herpes virus, intra-cerebral inoculations were negative, whereas normal brain had no such inhibiting influence.

It is interesting that other viruses affecting man which are similar to the herpes virus in many properties, those of poliomyelitis, rabies, and the supposed cause of lethargic encephalitis, are predominately neurotropic. The virus of small-pox, on the other hand, is epidermotropic both in man and animals. Zeeman suggests that all these viruses having affinity for tissue derived from the ectoderm, form a group of related organisms, or possibly are different varieties of the same organism, their different clinical effects being caused by some such peculiarities in pathogenicity as are observed in different strains of streptococci. Levaditi found that rabies could be transmitted from cornea to cornea in rabbits, the animals developing rabies but not keratitis, indicating that the virus remained latent but still virulent at the site of inoculation. Poliomyelitis, on the other hand, could not be transmitted by the rabbit's cornea.

Various intra-cellular bodies have been described by different authors as present in the herpes encephalitis of rabbits as well as in other neurotropic and epidermotropic diseases. Some have seen in these bodies stages in the cycle of a parasite which they claim is the cause of the disease. They are not found constantly, however, and may be regarded as more probably results of cell degeneration or as phagocyted particles of necrotic cells. Peculiar eosinophil bodies seen in the nucleus of the epithelial cells in herpetic corneal lesions are a constant and characteristic finding in herpes, but the identity of these bodies with those found in the central nervous system is questionable, and their nature is also still a matter of debate. (Doerr).

In the case of lethargic encephalitis there is actually some evidence pointing to an identity of its causal organism with the herpes virus. The arguments for and against this identity may be stated as follows: (Doerr), Arguments for: 1. The spinal fluid of cases of lethargic encephalitis has yielded in the hands of Doerr and Schnabel, Levaditi and Harvier, and others, a virus showing properties identical with the herpes virus.

2. The histologic pictures of herpes encephalitis in the rabbit and of human lethargic encephalitis are identical.

3. The tendency of the herpes virus to follow sensory nerves from their endings in the skin or mucous membranes to the brain and there to produce lesions suggests the possible course of infection in lethargic encephalitis. In a number of rabbits affected by spontaneous encephalitis through cage contact with herpes inoculated animals, Goodpasture showed that the point of entrance was apparently the nasal or pharyngeal mucosa, the cerebral lesions developing first where the fifth and tenth nerves reached the brain.

4. In certain immunologic reactions patients with herpes and with lethargic encephalitis are alike. Doerr and Zdansky found markedly positive skin reactions to herpes virus in seven cases of encephalitis. Normal persons all gave negative reactions, while in patients with herpes lesions the results were positive. The patients with encephalitis were, therefore, sensitized to herpes virus.

5. No other organisms have been found to be the cause of lethargic encephalitis.

Against the identity may be placed the following arguments: 1. The relative rarity of lethargic encephalitis.

2. The fact that epidemics of encephalitis have no relation to the frequency of herpes.

3. The fact that patients with herpes do not develop encephalitis.

4. The rarity of skin eruptions in encephalitis.

5. The rarity of successful inoculations from the spinal fluid of encephalitic patients.

6. The possibility that positive inoculations may merely indicate the accidental presence of herpes virus in the fluid with no causal relation to the encephalitis.

It may be seen that while the identity of the herpes virus with the cause of encephalitis can in no sense of the word be said to be proven, it remains at least a very interesting possibility of which more will undoutedly be heard.

As has been stated, herpes simplex and herpes zoster are probably two entirely distinct diseases. While discussing this group of diseases, however, it may be worth while to mention some very interesting evidence brought out by recent work pointing to a close relationship between herpes zoster and the common but equally mysterious contagious disease, chicken-pox. While herpes simplex probably always begins on the skin or mucous membranes, zoster, as it may be called to avoid confusion with herpes simplex, probably causes its first lesions in the central nervous system or sensory ganglia, the skin eruptions being secondary, which accounts for the usual negative result of inoculations from skin lesions. Some of the active infectious agents may reach the skin lesions, however, by extension down the sensory nerve, and Goodpasture observed late secondary crops of vesicles, evidently due to spread of virus from the lesions themselves. Kundratitz, inoculating infants and children with material from skin lesions of zoster, obtained from five cases, eleven positive inoculations. Thirty-seven of these patients developed a generalized skin eruption greatly resembling chicken-pox, which indicated a general infection from the site of inoculation. The positive cases were immune to later inoculations and occurred only in children who had not had varicella or zoster previously. De Lange saw an epidemic of chicken-pox in a hospital for which the only apparent source of infection was a case of thoracic zoster. Material from lesions gave identical complement fixation reactions. Leiner found that children who had had zoster were immune to varicella. This antigen from crusts of varicella lesions had been shown by Kolmer, Dold, and Girard, to be specific for the serum of chicken-pox patients. Most inoculations with blood of chicken-pox cases have been negative, but Rivers and Gillett by inoculations of blood intra-testicularly were able to increase the virulence of the infectious agent so that after four to eight animal passages uniformly positive skin and corneal reactions were obtained. Another American investigator, Tyzzer, found inclusion bodies in varicella identical with those described by Lipschultz in zoster. Cases have been described occurring in typical chicken-pox epidemics which showed a definite zosteriform distribution of the skin lesions. Hence it may be theorized that zoster is varicella affecting for some reason only one or more sensory neurones, and one reason for the frequent negative results of inoculation from zoster would be the fact that the majority of people have had varicella and have become immune.

While many of the views brought out in this paper and especially this last view are still on a purely theoretical basis, certain definite facts have been found out about the filterable virus of herpes simplex, and the work done on this subject has immensely stimulated and aided a study of other diseases which are probably also due to filterable viruses. When we realize what strides have been made in the last twenty years in our knowledge of the diseases due to bacteria, we can imagine that this study may in the near future drag a number of these other diseases out of the limbo of outer darkness in which they now repose. In this day when pleomorphic streptococci seem to be taking over all the unexplored corners of pathology, scarlet fever having apparently succumbed definitely, the work on herpes comes as a timely reminder that there are such things as filterable viruses which do apparently cause disease themselves.

SUMMARY:

1. Herpes labialis, facialis, corneae, and progenitalis form a disease which may be called herpes simplex, due to a filterable virus which produces a characteristic keratitis and encephalitis in rabbits.

2. Herpes zoster is probably not caused by the same virus but may prove to be due to a related virus. Evidence is accumulating pointing to a close relation between herpes zoster and chicken-pox.

3. Interesting analogies exist between the causative organisms of herpes simplex, poliomyelitis, rabies, small-pox, and lethargic encephalitis due to their neurotropic and epidermotropic properties.

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For other references see Doerr, whose recent extensive monograph completely reviews the literature to date.

OBSTINATE PATIENT

The doctor had just been visiting an Irish patient, and as the man's wife was showing him out, he said to her, "Your husband's not so well today, Mrs. Maloney. Is he sticking to the simple diet I prescribed?"

"He is not, sor-r," came the reply. "He says he'll not be after starvin' himself to death just for the sake of livin' a few years longer."

SOME METHODS OF PROVED VALUE IN FRACTURE TREATMENT*

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This paper is a brief resume of the methods that I have found effective in an experience of fourteen years in industrial surgery. During this period fractures were a part of the regular routine and we had fractures under treatment at all times. No methods will be given that I have not had ample opportunity to give thorough trial.

The Scapula: This bone is not often fractured and when a fracture occurs it usually results from sever direct trauma. X-ray is essential for proper diagnosis. A tight fitting adhesive plaster swathe with a wrist sling for the arm on the injured side has proved efficient in my cases. Occasionally a fracture of the acromion is encountered and this can be treated like a fracture of the outer end of the clavicle. Results are uniformly good.

Clavicle: Various types of apparatus have been used on the clavicle, running from a barrel hoop to an elaborate body cast with the arm in abduction. I have not found anything better than a modification of the classic Sayre dressing. The arm should be drawn well back and the shoulder should be elevated. An adhesive strap around the chest draws the arm back and a broad strip of adhesive under the flexed elbow draws up the shoulder. A Velpeau bandage over this adds to the security.

The only objection to the classic Sayre dressing is the fact that the fingers are immobilized. I always leave the fingers out and instruct the patient to move them frequently to avoid stiffening. Fixation should be maintained for four weeks. Results in my experience have been good and I cannot recall a single case where the efficiency of a miner was impaired by a clavicle fracture.

Personally, I have never seen a case where operation was necessary in fracture of the clavicle. In dislocation of the acromio-clavicular joint, however, the reverse is true and it is wise to tell a patient on the start that it probably will be necessary to operate. I try conservative treatment for a week or ten days and if the deformity recurs at the end of a short time, I operate.

Ribs: While painful at times these fractures offer no especial problems in treatment. A tight fitting adhesive swathe with a few days rest in bed, in severe cases, is sufficient.

Visiting friends and relatives get much thrill out of the emphysema that sometimes accompanies a rib fracture, but this does no harm. Results are uniformly good. Anyone who has ever had occasion to operate on a rib that has once been resected can testify to the reparative powers in costal periosteum and the ready repair they exhibit after fracture is not surprising.

Humerus: Fractures of the surgical neck usually do well with the Scudder treatment of wrist sling, swathe, axillary pad and plaster shoulder cap. Where this does not maintain reduction some form of abduction, either a body cast or an aeroplane splint, will often give results. Failing in this, suspension traction in a Balkan frame will often solve the problem. As this type usually occurs in elderly people, they are not good operative risks and open operation is to be avoided where possible.

Shaft: The Scudder treatment of axillary pad, coaption splints and adhesive swathe with forearm supported in a wrist sling is usually effective. If this fails, abduction should be tried. Cases in which abduction is not sufficient can often be successfully treated by suspension traction.

Supracondylar Fractures: Some cases of this type can be maintained in good position by a right angled splint. In case this does not hold them, acute flexion to at least sixty degrees will assure a satisfactory alignment. Fixation in all fractures of the humerus should be for a period of four weeks but the acute angle of flexion in supracondylar fractures may be lessened after ten or twelve days.

Fractures at the Elbow: During my first months as an industrial surgeon I memorized the following from a volume of that year's model of Scudder's work on Fractures:

"Fractures of the internal condyle, the external condyle, the internal epicondyle and "T" fractures into the joint should be put up in the Jones' position of acute flexion."

That has proved to be ample knowledge for the treatment of this type of injury. Reduction under ether with the acute angle as sharp as it can be made without effecting pulsation in the radial artery is the ideal method. Acute flexion should be made for ten days and then the angle gradually lowered. I usually plan on getting the arm to a right angle in three weeks.

Radius and Ulna: Fractures of the radial head usually do well on a right angled splint. Fractures of the upper end of the ulna also do well in this position. In case a dislocation of the radius accompanies the high ulnar fracture, acute flexion is advisable. Fractures of the shaft of either bone alone offer no special difficulties but fractures involving the shaft of both bones demand great care. I have found careful reduction under ether and anterior and posterior splints in a position of semisupination quite satisfactory.

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In difficult cases, traction in suspension in a Balkan frame or open operation must be considered. The interosseous space is not great and a heavy callous in a fracture not in good position may cause serious interference with pronation and supination.

Colles' Fractures: These demand careful breaking up of inpaction and reduction under ether. The type of splint is not important if reduction is good. Have usually used the anterior and posterior splints of Scudder with the hand in semi-supination. Never extend a splint further than the metacarpophalangeal joints as it is a mistake to interfere with flexion of the fingers. Encourage patients to flex and extend the fingers from the start.

Carpal Fractures: The scaphoid is the bone most frequently injured. Separation of the fragments is usually slight and good results follow immobilization on a splint for three or four weeks. Diagnosis is all important in these cases and there is no region in which careful x-ray examination is more essential. No wrist injury should be dismissed without radiographs in both the anterio-posterior and lateral positions for it is only by doing this that one can be sure he is not overlooking a fracture of the scaphoid or a semi-lunar dislocation. Satisfactory results follow prompt recognition and correction of these deformities but a wrist badly impaired in function is sure to follow failure to detect them early.

Metacarpals and Phalanges: These fractures ordinarily are easily treated by splinting on a light palmar splint but sometimes offer difficulties. Traction secured by adhesive and a strong rubber band fastened to the end of a long palmar splint will often prove effective in the difficult cases. Active motion should be also started as early as possible to prevent tendon adhesions and subsequent functional impairment.

Pelvis: Fracture of the pelvis is not especially difficult to treat if uncomplicated. The complications at times tax our resources. . Injury to the male urethra necessitating a suprapubic cystotomy and retrograde catheterization is the most common complication. Injury to the bladder itself and occasionally to the rectum also occurs. As far as the fracture of the pelvis is concerned, rest in bed, preferably on a Bradford frame for seven or eight weeks is all that is required. Some use adhesive swathes and some plaster casts but in my experience these are unnecessary and do not add to the comfort of the patient or the functional result obtained. Injuries of this type are probably more common in underground mining than in any other occupation and our cases were all able to resume their old jobs upon recovery. The fact must not be lost sight of that this injury is usually due to trauma of an extreme type and initial shock is apt to be considerable.

Femoral Neck: Whitman's abduction method is by all means the best for these cases. Under ether, and with the patient on a traction table a cast should be applied from the axillae to the toes with the leg in extension and abducted to forty-five degrees. This position should be maintained for twelve weeks and weight bearing should not be permitted for at least nine months and a year would be better.

Shaft: The Balkan frame and suspension traction is the ideal method for treating all types of fractures of the femoral shaft. This is more comfortable for the patient and gives most efficient traction. Reduction should be checked by radiographs and also by comparative measurements. In difficult cases skeletal traction by ice tongs or Steinmann pin is excellent and intelligent application of this method will greatly reduce the number of operative cases.

Tibia and Fibula: Fractures of the shaft of the tibia and fibula can often be treated by reduction under ether and application of a cast which can be split to guard against pressure from swelling. I was quite enthused for some time over the use of this method with traction maintained on a Hawley table until the cast set. In case of severe trauma to the soft parts or marked displacement the method of suspension traction on a Balkan frame with a modified Sinclair skate as a means of applying traction will be found effective. Skeletal traction with a Steinmann pin through the os-calcis has also been most efficient in some of the more difficult cases.

Potts' Fracture: Potts' fracture should be put up with the foot at right angles to the leg and the foot turned strongly inward. Reduction should be made under anesthesia. The plaster splints devised by Speed and Whitman are excellent for maintaining proper position. Personally, I have found a plaster cast efficient. The foot should be held in inversion until the plaster has set and the cast should be split as a safeguard against pressure damage from swelling.

Os Calcis: Fractures of the os calcis should be reduced under anesthesia and put up in a cast with the foot in plantar flexion. Sometimes a tenotomy of the tendo achilles is necessary to secure apposition of a badly displaced fragment. An orthopedic wedge is often of aid in reshaping the foot.

Astragalus: Manipulation under anesthesia with the foot put up in plaster at a right angle to the leg usually is satisfactory in this fracture. In badly displaced fractures an astragalectomy is sometimes necessary to secure the best function. In one of my cases a man weighing one hundred and seventy-five pounds fell eighty-five feet and lit standing on a concrete platform. He sustained severe fractures of the os calcis and astragalus on the right side and a comminuted fracture of the os calcis and compound fracture of the lower one-quarter of the tibia on the left. The final result in his case was very good and he was able to stand at a lathe ten hours a day in following his occupation as a machinist.

Tarsal Bones: Manipulation under anesthesia and a cast with the foot at right angles to the leg suffices for fractures of this type.

Metatarsals: A well paddde plantar splint or a cast is good treatment in these cases. Displacement is usually not great and reduction not difficult. This type of fracture is often unrecognized in laborers who have dropped a heavy object on the foot. A point of tenderness along the injured bone and an x-ray will clear up the diagnosis.

SUMMARY

General anesthesia is a boon to the patient and an aid to the surgeon in reducing a fracture with any considerable displacement. Ether is best as the relaxation it gives facilitates reduction.

Suspension traction is incomparably the best method in all fractures of the femur and in tibial fractures not readily reduced or maintained in reduction. It also will prove an aid in fractures of the humerus and forearm and will often save an open operation.

Skeletal traction often succeeds where other methods fail and is surprisingly comfortable for the patient. I recall a case with a badly shattered fibula and a fracture of the lower quarter of the tibia with two inches of shortening. The skin over the entire anterior surface of the leg was torn and eroded due to trauma from falling ore. A Steinmann pin through the os calcis overcame shortening and gave union in good position and an excellent result. An old man was referred to me with two and one-half inches of shortening and no union following six weeks treatment elsewhere for a fractured femur. He was a poor operative risk and ice tongs traction was tried as a preliminary measure. The shortening was overcome and good union resulted. These are only two of several cases I could cite where the method has proven its value.

Suspension traction supplemented by skeletal traction will save many open operatives. They will be necessary at times, however. Over-enthusiasm, poor judgment and faulty technic all helped to discredit a valuable method in the years following Arbuthnot Lane's paper in 1912. In spite of this the steel plate today is the most convenient and effective method for correcting malposition in fractures that will not yield to conservative measures. Anyone who has had extensive experience in its use or has had an opportunity to see results obtained by its use in Sherman's Clinic in Pittsburgh will give first thought to a Vanadium steel plate in open operation on fractures.

The x-ray is essential to the modern treatment of fractures. In industrial work where the best possible results were demanded and x-ray expense was not an item we followed the following routine:

An x-ray before reduction.
A check picture after reduction.
A picture seven to ten days later, to see that position was satisfactory, and
A final picture before dismissal from treatment.

Where there is a possibility of fracture an x-ray should always be taken before a negative diagnosis is made. This is of vital importance in wrist injuries where failure to take x-ray pictures in two positions may mean overlooking a dislocated semilunar or a fractured scophoid.

In foot injuries too many severely bruised feet show metatarsal fractures and radiographs should not be neglected, no elbow injury should be negatived before radiographs in two planes have been examined and in fractures high up on the ulna great care should be exercised to avoid overlooking a concurrent dislocation of the head of the radius.

I once heard a young orthopedic surgeon harangue a medical meeting on the importance of prompt reduction of fractures comparing this to the need of prompt operation in acute appendicitis. It is well to remember when seeing a fracture case, showing traumatic shock, that great speed is useless, if not dangerous, without good control. A hypodermic of morphine and twelve to twenty-four hours rest will put such a patient in better shape for his anesthetic and reduction.

Trauma sufficient to produce fracture of a bone damages the soft parts as well. In restoring function, massage, diathermy and baking all have their uses. The greatest factor in restoring function however, is the co-operation of the patient in actively using his own muscles when the proper time arrives.

The knowledge of how to diagnosis and treat fractures correctly is not difficult to acquire. Its intelligent application, however, is, to quote the Tennessee mountaineers: "Something else again". No branch of surgery requires more painstaking care nor exacts a greater toll of regret for carelessly taking things for granted.

Success requires infinite attention to the minutest detail.

THE MECHANISM OF PRESENTING SYMPTOMS IN PULMONARY TUBERCULOSIS*

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"Although tuberculosis if *diagnosed early and treated intelligently* has been removed from the list of fatal diseases, yet this is only accepted in a half-hearted manner. It is not fully believed by either the laymen or the profession. This lack of faith in its curability adds to its deadliness because it keeps up such a fear of the disease that the patient and his friends fight against knowing the truth, and medical men shrink from finding it out, or, if they know it, from telling the patient until the early curable disease has become an advanced and hopeless one." These words are Pottenger's.

The general practitioner, the man who first sees sick people in the early stages of their diseases, can by a proper and thorough understanding of tuberculosis, do more to lessen its morbidity and mortality, than all possible organized institutions for research, or treatment. It is diagnosis, not treatment, that still presents the greatest obstacle to the eradication of the great white plague. The mass of the profession is still delinquent in the recognition of its early stages, and consequently the public is not on the alert, and is hard to convince. How can the physician convince his lay patient that the latter's abdominal pain or the rheumatism in his shoulder are due to pulmonary tuberculosis, unless he himself thoroughly understands the anatomy, physiology, and pathology concerned?

The greatest errors and oversights come from looking to the lungs only for signs and symptoms when pulmonary tuberculosis is considered. This condition is not merely a local lesion; it is a disease of the entire body, and affects every organ in it. Not one patient out of twenty with early pulmonary tuberculosis, complains of symptoms that would directly call attention to the lungs. It is a very callow mistake to "examine the lungs", though the expression is commonly heard. To arrive at a conclusion as to whether or not pulmonary tuberculosis exists, requires going over the patient from head to foot, organ by organ; the leading clues are much more apt to be found in other organs than in the lungs: and unless the examiner understands thoroughly the pathology of tuberculosis, including the anatomy and function of the nerves, muscles, and other organs concerned, the diagnosis will not be made, and the patient will be treated or operated upon, on the basis of some superficial symptom.

The most frequent cause for mistaken diagnosis is the leading symptom itself, the complaint that compelled the patient to seek medical assistance. In early tuberculosis these complaints are referred to organs and parts of the body so far removed from the lungs in location and function, that they are extremely misleading. This paper is an effort to explain the physiological mechanism of a number of symptoms of tuberculosis which do not seem to point directly to the lungs, in the hope that a more thorough understanding of this mechanism will help establish their connection with pulmonary disease more vividly in the minds of examiners, and secure more frequent diagnosis of tuberculosis in a stage where treatment is of some avail.

Frequent and protracted colds. It would seem that a complaint of this sort would intrinsically call attention to the possibility of lung disease; but if it does, the prevailing rule is to ignore the suggestion. The usual diagnosis is "chronic bronchitis", which has a harmless sound, and does not unduly alarm the patient. In every case of frequent or protracted colds, tuberculosis should be strongly considered; and should not be forgotten until proven absent. There are two possible explanations of these colds on the basis of tuberculosis.

The tuberculous toxemia and malnutrition so exhaust the patient's defenses that frequent infection with ordinary catarrhal organisms takes place easily and often; and each attack for the same reason persists longer than it would in a person of normal health and resistance.

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*Read before the Lancaster County Medical Association, Oct. 5, 1926.

Or, the attacks may consist of actual tuberculous bronchitis, due to tubercle bacilli in the respiratory mucous membrane. In cases where specific immunity is well established, the mucous membrane can take care of heavy infections with tubercle bacilli, with only moderate reaction and symptoms and short course, for the regional lymph nodes receive the brunt of the attack. Many a case diagnosed as "bronchitis", "flu", or "grippe" is in reality a bronchitis due to the lodgment in the bronchial mucous membrane of tubercle bacilli, inward- or outward-bound. These are always cases in which the lungs are already involved and systemic immunity well established; for a primary tuberculous bronchitis is a chronic and destructive lesion.

Chest pains ought also naturally cause one's mind to turn to the lungs, at least for a fair consideration of the possibility of tuberculosis. But, so afraid are many medical men of the diagnosis of tuberculosis, that I have seen many cases of chest pain in which the patient himself was quite convinced that he had a lung lesion, whereas this medical adviser avoided the issue by calling it neuralgia, focal infection, or some equally vague thing.

It may be a tuberculous pleurisy. Such a pleurisy, like a tuberculous bronchitis, is usually self-limited and not dangerous; but also, likewise, is always a serious sign. Because lymphatic drainage is away from the pleura, a pleurisy is a hematogenous metastasis, and means an open lesion somewhere else. Any chronic or frequently recurring pleurisy is strongly presumptive of tuberculosis.

It may be an intercostal neuritis, caused either by the involvement of an intercostal nerve in a pleuritis; or a neuritis of a degenerative nature, the pathology of which is more fully taken up in the discussion of arm and shoulder pains.

Most probably, however, it is a visceral reflex. The inflamed lung parenchyma gives rise to no locally referred pain because it has no sensory nerves. However, the inflammation gives rise to afferent impulses corresponding to pain, in the vagus and sympathetic endings. The sympathetics find their way through the *rami communicantes* to the III, IV, and V cervical segments. The fact that these segments supply the skin and muscles of the shoulder-girdle explain why pains are more frequent in that region. However, there is enough communication vertically by means of intercalated neurones to affect the lower segments which supply the pectorals, intercostals, serrati, subscapulars, etc. The constant stream of abnormal afferent impulses from the inflamed viscus results in a hypersensitiveness of the central segment, which thereupon interprets ordinary vegetative impulses from the skin and muscles as pain. It is the same mechanism that produces subscapular pain in gall-bladder disease, or periarthritic pain around an inflamed joint. The site of the pain offers but little information as to the location of the lesion because of the wealth of nervous intercommunication and the many possible paths that impulses may take.

Symptoms Suggesting Heart Disease. The normal pulse rate is an equilibrium between sympathetic and vagus control. Both of these systems have afferent-nerve terminals in the lung parenchyma to receive impulse from the diseased portion. It has been satisfactorily demonstrated that the stimulation of one branch of the parasympathetic system (of which the vagus is a part), will result in stimulation of and production of parasympathetic effects in other branches. The nausea and vomiting produced by eye-strain is a good illustration of this principle. The stimulation of the vagus endings in the lung, therefore, produces a direct reflex stimulus on the vagus branches to the heart. Bradycardia is not an infrequent finding, especially in cases that have begun to improve.

However, if there is considerable toxemia, the effect of the sympathetics on the heart predominates, and the pulse is rapid. In the case of the sympathetic system it has not been conclusively proven that stimulation in one branch produces effects in other branches. However, the effect of any toxemia is to stimulate the sympathetic system as a whole. The circulating toxin affects it centrally, and the effect on the whole body is that of a predomination of the sympathetic effects in the sympathetic-parasympathetic equilibrium. The sympathetic system provides the body's only response to any emergency, whether it is physical danger, emotion, or toxemia. The response is the same in all cases, and consists in a suspension of the vegetative functions, such as digestion, assimilation, and anabolism, and a speeding up of the combat functions: An increase of blood supply to the central nervous and muscular systems, and the mobilization of sugar and of the secretions of the adrenal and thyroid glands. In general, therefore, while toxins are being absorbed, there is a rapid pulse; and the pulse rate is a fairly good guide to treatment and progress. However, allowance must be made for at least two other causes of rapid pulse.

The thyroid gland is intimately connected with the sympathetic system; and when there is a toxemia, the thyroid comes in for its share of stimulation. Its increased secretion may produce a tachycardia out of proportion to the amount of tuberculous toxin being absorbed.

In long standing cases the constant irritation of the vagus branches from the lung and to the heart, produces a degenerative neuritis, and a loss of function. This permits a predominance of sympathetic influence, and results in a tachycardia.

Dyspnea is another symptom suggesting heart disease. In pulmonary tuberculosis it occurs usually in advanced cases, and from a number of causes. In severe toxemia, the heart may be so weakened by overstimulation and exhaustion, that it is unable to respond to a slight excess of effort. This means decreased movement of the blood, and a consequent air-hunger on the part of the tissues.

There may also be an insufficient movement of the body's total blood volume due to a stasis of the great mass of the blood in the abdominal capillary area. The factors producing this are explained in the paragraph on gastro-intestinal symptoms. There is so small an amount of blood in active motion that it is insufficient to carry enough oxygen and carbon-dioxide for tissue respiration; and the dyspnea is an expression of oxygen hunger and acidosis.

Again, there may be insufficient aeration of what blood the heart does move. If lung involvement is extensive, decreased pulmonary area may play a definite role in producing dyspnea. The restricted area may be sufficient for all purposes during rest, but fails to provide sufficient reserve for exertion. However, the most potent cause of inadequate aeration of the blood is the restriction of respiratory excursion by a reflex spasm of the muscles of respiration. Due to the impulses carried from the lung by the sympathetics to the III, IV, and V cervical segments and by intercalated neurones to lower segments, there is tonic spasm of the diaphragm and of the accessory muscles of respiration, sufficient to reduce respiratory movement to a very small fraction of the normal. Pleuritic adhesions may produce a similar restriction of motion. Under such conditions, there is not enough air exchanged in the alveoli to supply the blood with oxygen and to eliminate its carbon dioxide.

Gastro-intestinal symptoms. Symptoms referred to the abdomen are the most frequent of all the manifestations of early tuberculosis. They are also the most misleading features of this condition, and are responsible for a great deal of incorrect and misdirected treatment.

While some of the vague abdominal pains complained of in early pulmonary tuberculosis may be muscular and cutaneous expressions of central segment irritation by afferent pulmonary brances of the sympathetic, in other words, visceral reflexes, most of the gastro-intestinal symptoms are due to functional disturbances of the abdominal organs, produced either reflexly, or as results of circulatory stasis in the abdomen due to the restriction of diaphragmatic movement.

In order to understand the reflex functional disturbances it must be kept in mind that the functions of the stomach and intestine are activated by the vagus and inhibited by the sympathetic. Therefore, in cases with toxemia, there will be sympathetic stimulation and resulting inhibition of secretion and muscular activity, manifesting itself as hypochlorhydria and retarded emptying, scanty intestinal secretion and sluggish contraction of bowel musculature. In clinical terms these things mean anorexia, dyspepsia, pain and heaviness after meals, tympany, and atonic contipsation with hard, dry stools.

In the vagus system, direct reflexes take place; and the vagus stimulus means an increase in function: Hypermotility and hyperacidity, with pain of the so-called ulcer type, nausea, and vomiting. In the bowel, hypersecretion and hypermotility mean diarrhea and then spastic constipation. In late cases, when a degenerative vagus neuritis from prolonged irritation has taken place, there is a diminution of vagus function and a preponderance of sympathetic; the train of symptoms is the same as that mentioned in the preceding paragraph as being due to toxemia, but is more constant and persistent.

The abdominal stasis produced in tuberculosis is the most important phenomenon taking place in the body, next to the pathology in the lungs. As is well known, respiratory movement of the diaphragm plays a large part in maintaining the circulation of the blood in the abdominal area. In inspiration the intrathoracic pressure is lowered and the intra-abdominal pressure raised, so that the blood is squeezed from the abdominal cavity into the thoracic. Venous pressure is insufficient to produce an adequate movement of the blood from the abdomen to the right heart without this assistance. Because of reflex irritation of the phrenic nerves or their direct involvement in hilum infiltration, a spasm of the diaphragm is produced, restricting its respiratory movements. As a result, there is a backing up of blood in the abdominal veins, with a vast and distressing train of symptoms in its wake. There is a passive congestion of all the organs, liver, kidneys, large and small bowel, pancreas and adrenals, and pelvic organs; with pain and tenderness, disordered function and symptoms incident thereon, in the case of each individual organ, the possibilities for trouble are innumerable. In practice, the actual findings are quite as numerous and varied as theoretical considerations indicate. The tuberculous patient is an astonishing collection of complaints; there are no two patients alike, and yet each one of them seems to have every complaint there is. The loss of intra-abdominal fat because of malnutrition, and the loss of muscle tone because of general weakening, all contribute to the decrease of intra-abdominal pressure and resulting failure to return abdominal blood into the general circulation.

The stasis of most of the systemic blood in the mesenteric capillaries means that there is an insufficient amount of it in the general circulation. The patient is pale; though not anemic in the technical sense of the term; in fact his hemoglobin and red count may be abnormally high in the effort to compensate in oxygen-carrying power for lack of volume moved. There is not enough volume of blood in the peripheral circulation to give color to surfaces or to keep up tissue respiration. There considerations suggest that to be content with a diagnosis of atonic constipation, or functional diarrhea, or passive congestion of the kidney, is to run the risk of giving a symptom the importance of a disease, and depriving the patient of his best opportunities or thorough recovery.

Also, in the explanation of abdominal symptoms, local tuberculous processes must be considered. Of these, nothing further need be said here.

"Nervousness" is a symptom with which early cases often present themselves. By it they mean a sensation of tenseness, irritability to stimuli, and tremors. These are all expressions of systemic response to the emergency stimulus of the sympathetic system, produced by toxemia. The body is keyed up to respond to an attack upon its safety. The adrenals and thyroid are concerned. When we consider that this relentless drive of the sympathetic system is exerted on exhausted and malnourished tissues, there is no wonder that tremors and anxiety states result.

Headache may be for a long time the only complaint in early cases, completely overshadowing the pulmonary feature. There are several types. In the toxemic type due to the absorption of the toxins produced by the tubercle bacillus, the headache is an expression of the irritability of the central nervous system. The same thing is found in toxemia due to any cause. There is the type of headache produced reflexly from the gastro-intestinal tract; it is due to the atonic, overloaded bowel, or to reduced intra-abdominal pressure. The frequent association of sphenoidal, ethmoidal, and maxillary sinusitis with pulmonary tuberculosis, will explain some of the headaches. Finally, there is the headache due to disturbances in accommodation produced by unequal stimulation produced on the pulmonary ends of the vagi; each eye is differently adjusted, because of the differing stimuli on the two sides proceeding through the vagus and the oculomotor nerves.

Dysmenorrhea. It seems to be difficult, not only for patients, but also for physicians to believe that menstrual pain and irregularity can be directly connected with pulmonary tuberculosis.

The most obvious connection is that of the amenorrhea of severe debility; the malnourished, exhausted body attempts to economize and relieve some of the drain. It is also readily apparent that the pelvic congestion produced by the abdominal stasis of diaphragmatic fixation will cause passive congestion of the ovaries and uterus, with pain, tenderness, cramps, and perversion of menstrual function, which is usually a menorrhagia. Finally, the close association of the ductless glands among themselves and with the sympathetic system, is a factor. The adrenals and thyroid are almost a part of the sympathetic system. The secretions of both activate the ovary. If sympathetic stimulation predominates, there is hyperactivity with menorrhagia and cramps; if the parasympathetic is the stronger, there is amenorrhea.

Hoarseness and Aphonia. A great deal of coughing will produce a simple inflammation of the vocal cords, with resultant interference with the voice. The loss of voice due to actual tuberculous process in the larynx is also well known. However, by far the greatest number of cases of hoarseness and aphonia, especially those of moderate degree, are due to reflexes from the pulmonary endings of the vagus, acting through its superior and inferior laryngeal branches. If the vocal cords show an inability to adduct, the recurrent laryngeal is responsible; and the cause may be the pressure of enlarged mediastinal lymph nodes on the nerve, or its involvement in mediastinal infiltration. If the cords approximate at the ends, but the cricothyroid muscle lacks tone and they do not come together in the middle, the effect is due to a visceral reflex through the superior laryngeal. Tickling in the throat, and the characteristic dry, brassy cough are produced by the same mechanism.

Arm and Shoulder Pains. Such pains may be the earliest symptom of pulmonary disease that come to the patient's attention. In the past, they have been too frequently called rheumatism, arthritis, neuritis, and focal infection, and the pulmonary condition overlooked until it was too late to save life. Any persistent pain in the arm or shoulder calls for a careful consideration of the lungs.

Pains in the arm or shoulder may be produced, first of all, as a visceral reflex, by a mechanism already mentioned several times.

They may be due to an actual neuritis, especially in the brachial plexus. The involvement is nearly always on the side where the lung is most extensively diseased or most active. The neuritis may be due to an actual tuberculous involvement, which is rare; to the action of toxins on the nerves, or, most frequently, to long continued reflex irritation. The latter produces a parenchymatous degeneration; the nerve filaments atrophy while the axis cylinders remain intact. In late stages the axis cylinder is involved and conduction is interfered with. Pottenger cites cases of true Wallerian degeneration from this cause.

An interesting cause of brachial plexus pain is the dropping of the shoulder-girdle because of reflex atrophy of the muscles which support it. This results in a stretching of some of the trunks of the brachial plexus, and produces pains which may be quite severe. I have seen cases in which the raising of the shoulders relieved the pain within a few minutes.

The above considerations are presented in the hope of stimulating more attention to the extra-pulmonary symptoms of tuberculosis of the lung. A better understanding of and a deeper interest in them will prevent the limitation of attention to the local part concerned in the superficial symptom, and will save more lives by making possible the discovery of the pulmonary lesion before it has advanced to the hopeless stage.

SURGICAL PITFALLS*

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The text-books used when I began the study of medicine, among them Gross and Ashhurst, did not emphasize Lister's antiseptic theory, but they were gradually advocating the use of carbolic acid and later that of bichloride of mercury. These drugs were used in what we today would consider strong solutions.

At that time brain operations were confined to trephining to assist in the elevation of depressed fractures, and the occasional draining of an abscess. Thoracic surgery consisted in resection of ribs for the drainage of empyemas. Abdominal operations as we know them today were in their infancy: As an example, in doing an abdominal hysterectomy the tumor was delivered outside of the abdomen, the cervix together with the broad ligaments, was encircled by an ecraseur, which was prevented from slipping by two transfixion pins passed at right angles through the cervix. After tightening the ecraseur the tumor was cut away and the stump was fastened into the lower angle of the abdominal incision. The extra-peritoneal part of the stump would, in the course of a number of days, slough off and the wound heal. That is the way I first learned to do hysterectomies. Colostomies were not done as we do them today; then, the descending colon, that portion of the wall uncovered by peritoneum, was opened, thus lessening the dangers of infecting the peritoneal cavity. Gradually came the development of aseptic surgery and the wonderful work which is done today.

When I first went to Europe I intended to study in England. You will be surprised when I tell you that the two men who operated on King Edward for appendicitis did not believe in antisepsis. One, Thomas Smith, afterwards knighted Sir Thomas, a famous surgeon of St. Bartholomew's Hospital, I saw resect a knee-joint, he wearing a Prince Albert coat covered with blood. The more dirt one had on his coat, the more *eclat* he seemed to receive. Mr. Smith did not even wear an apron and he did not accept the Listerian practice. I was brought up in New York where antiseptic methods had been accepted, and I was so disgusted with what I saw in London that I went to the Continent and stayed there a couple of years. The Listerian method was not then accepted by the English or Scotch, but had been by the Germans and French.

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*Given before Omaha-Douglas County Medical Society, October 12, 1926.

A French surgeon once said: "I can teach my assistants how to operate in six months, but to teach them when to operate takes twenty or thirty years." Because Crile, or Moynihan, or Mayo can do a skillful, safe operation, does not mean that an ordinary surgeon can do as well. Therefore, statistics admitted from such sources are not the true basis upon which a patient can hope for his probable recovery. On the other hand, there may be many general surgeons who can meet certain surgical emergencies better than these distinguished men. A brain operation may be a great success in the hands of Harvey Cushing but a failure in the hands of one who had not had special training in this line of practice. There is no such a thing as a specified mortality in surgical operations; the mortality depends on how and when the operation is done, and who does it. A story is told of a man who was about to undergo a very difficult and dangerous operation. The surgeon assured his patient it would be entirely successful. When pressed for his reason for his great confidence he said: "Well, the mortality of this operation is ninety-five per cent. I have already done it nineteen times and all the patients have died; this is the twentieth and he is bound to recover".

As has been well said of operations of emergency and operations of election, it is difficult to see the former done by acknowledged experts. We read of some men especially skilled in operating for perforating gastric and duodenal ulcers, and other kinds of the "acute abdomen", but because these occur at unusual hours and so irregularly, we have few opportunities to see the technique carried out. The only way we see these emergency operations is by having a hospital service, or an interneship, or an assistantship.

Doctor W. O. Bridges spoke of something just now that made me think of an early pitfall wherein I made a mistake. A doctor whom I knew, we all knew, a very good man, sent a patient in to the hospital. He telephoned that it was a case of acute appendicitis, and I had so much confidence in the doctor that I did not try to make a personal diagnosis. I removed the appendix; it looked quite normal to me; I could not understand it. The next day symptoms of pneumonia were in evidence, empyema developed, and finally the patient died. I don't know that the removal of the appendix had anything to do with the unfortunate result, but that is one pitfall into which I tumbled, mixing right-sided pneumonia and acute appendicitis. Only a short time ago a case of supposed acute appendicitis—the abdominal symptoms were said to be characteristic — came to my service in the University Hospital. I always like to examine the chest but it is frequently unnecessary to make a physical examination in order to make a diagnosis. I knew by a cursory glance at this patient that the case was one of pneumonia and not appendicitis, and so I called in my medical colleague and tried to catch him on the diagnosis, just for fun, but I did not succeed. A short time afterwards he asked me to see a case in his ward, a boy twelve years old, with a distended abdomen, a large mass anybody could see and feel. My colleague talked about an exploratory incision, a kidney operation perhaps, and so forth. It just so happened as I looked at the boy that I recognized something significant: On the boy's forehead were two bumps about the size of the small end of a small chicken egg; they were soft in the center, although not discolored. Of course, I knew what they were, the strongest possible evidence you can have of late syphilis. I judged that the abdominal mass, liver perhaps, was syphilitic. Then I was told that the boy had a four-plus Wassermann. It was a very unusual case of congenital syphilis. The abdominal tumor and gummata on the forehead disappeared under proper medication.

Early in my career I learned to recognize gummata. One day years ago, up at Kennard with Doctor Pruner, the elder Doctor Pruner, father of our doctor here, I was asked to see a woman who had had an exploratory operation done in Omaha, with the result that she was told she had a large carcinomatous liver. The woman opened the door of her cottage in answer to the doctor's knock, and as she stood in front of me I looked into her face and saw the same kind of gummata on her forehead as were presented on the boy's forehead. After we went out I told Doctor Pruner that the woman had gummata on her forehead, and that the tumor in her abdomen was probably syphilitic. She was put on anti-syphilitic treatment and I was later advised that the abdominal tumor had disappeared.

A gumma looks like the small end of a small egg, later becomes soft in the center, and if you wait long enough the center becomes discolored, breaks down, and you have an ulcer with a more or less distinct border.

I made a fatal error once in differentiating between gallstone colic and a perforating duodenal ulcer. It was many years ago, in fact my first case of perforating duodenal ulcer. I was called to see a young man early in the morning. He had a terrible pain in the abdomen. To me it was so characteristic that I made a diagnosis of gallstone colic. As the day wore on I began to suspect I had made a mistake. I had Doctor Bridges see the case with me. The man was vomiting and he vomited up a little blood, so we came to the conclusion that it was an ulcer of the stomach, probably perforating. In twenty-four hours the man was dead, and the autopsy showed a perforating duodenal ulcer. I have never forgotten that case, and that brings me to the point: How are we going to differentiate between gallstone colic and acute abdominal perforations? I have never in my life seen a case of gallstone colic where the patient could lie still in bed; he will thrash around, possibly get up, go into the toilet room, come back, relax, and then repeat all this. I have never seen a patient suffering from a perforating ulcer, stomach or duodenal, who would scarcely move at all; he will lie still, moving increases the agony. If I had realized this when I saw my first case, I would not have made the mistaken diagnosis. However, the man would in all probability have died even if operated upon in a technically correct manner. There must have been something especially malignant about the duodenal contents as death within twenty-four hours after perforation is most unusual.

For the younger members I would like to tell of an instance that teaches the truth of experience. Always personally examine most thoroughly every patient committed to your care, notwithstanding the case may have been diagnosed and treated by the most eminent man, or men, of any specialty. A very well-known gentleman of this city had had a perineal exploratory opening made into his bladder by the then best known genito-urinary surgeon in America, assisted by another surgeon almost equally distinguished. The operation had been done for the purpose of removing an enlarged prostate. Both gentlemen examined the prostate through the incision in the membranoprostatic urethra, but for some reason they concluded it would be unwise to enucleate the prostate. The man came home, his perineal wound nearly healed. He had been advised to continue the use of the scrupulously clean catheter. When I was consulted, knowing the reputation of the surgeons whose patient he had been, I concluded that there was nothing particular for me to do, that the symptoms complained of were due to the enlarged prostate, and I did nothing further than suggest symptomatic measures. I happened to be temporarily absent from the city, and the patient, feeling very uncomfortable, called in another surgeon, one of those men who always do something when called, (usually a wise course when well-judged). Not suspecting a complicating pathology, he told the patient that if he were allowed to pass a sound it would dilate the urethra, and relieve somewhat the dysuria. When the sound was passed it struck a stone in the bladder. On my return to the city I was called to verify the finding of the stone, it was too evident. The patient, a hard-headed and hard-hearted character, insisted that my colleague, having discovered the stone, an enormous one, should remove it. He did so, received a $500.00 fee, and I lost the patient and fee because I had not personally made a proper thorough examination on my own account. The man who did discover the stone did so accidentally in the carrying-out of an excellent custom: When a patient sends for you try and do something for him showing an interest. What is done should always be harmless, done with the intent of making the patient feel better and creating confidence. This having been accomplished, further treatment, whatever its kind, will have fairer sailing.

PITFALLS IN OBSTETRIC PRACTICE*

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There is no department of medicine that offers greater opportunity for errors in judgment than does obstetrics. This is so because obstetrics is far from being an exact science. In dealing with mother and child there is a double hazard involved and the demands for prompt and heroic action often leave little time for deliberation. Doctors young and doctors old, doctors wise and doctors foolish are all alike the victims of erring judgment. Wisdom and experience do not always avail for the wisest and most experienced of obstetricians will now and then bungle and stumble into pitfalls. The skill of the obstetrician, as of the surgeon, is not measured so much by the pitfalls he avoids as by his dexterity in extricating himself when once he has fallen. Men of medicine who have ripened in experience are most mindful of the pitfalls which beset them on every hand and this keeps them humble and cautious and this, I submit, is the safest sort of a doctor.

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*Read before the Omaha-Douglas County Medical Society, Oct. 12, 1926.

In the limited time at my disposal I can do no more than present in generalities some of the hazards of obstetric practice and we will begin with caesarian section — the most abused of all obstetric operations.

CAESAREAN SECTION

Approximately one-third of all deaths occurring in parturition are the aftermath of caesarean sections. This is so because in the hands of the average operator delivery through an abdominal incision presents less difficulties than do difficult deliveries through the natural passage. The art of the old masters — of Smellie and Chamberlain, of Braxton Hicks and Simpson has been superceded by the deciples of Lawson Tait and McDowell. In this connection we recall the words of Shakespeare who relates that MacDuff "was from his mother's womb untimely ripped".

The mortality of caesarean section in the hands of trained obstetricians does not exceed two to four per cent in contrast to a mortality of near ten per cent in the hands of the general profession. The reason for this discrepancy in results is accounted for only in small part to the difference in surgical technic. The classical operation is comparatively simple and were this all there is to it there would be little difference in the results of the trained obstetric operator and the general surgeon. To account for the difference in results we must go back to the prenatal management; to the events immediately preceding the operation and to the choice of operative procedure.

With intelligent prenatal observation the necessity for a caesarean section can usually be anticipated and a favorable time for the operation elected. Too often the operation is performed after the danger period has begun. The time for election is just before or early in the first stage of labor; with every added hour of fatigue the dangers are immeasurably increased. A potentially infected patient is a bad risk in caesarean sections and all patients are potentially infected twenty-four hours after the rupture of the bag of waters and after vaginal examinations. And yet caesarean sections are performed even after attempts to deliver by means of forceps and version. Even then the results would not be so appalling if the low cervical incision and the extraperitoneal operations were generally employed. With more timely and judicious consideration of the indications for caesarean section there will be fewer operations performed, with the result that there will be more mothers saved and possibly more babies lost.

ECLAMPSIA

The high mortality following caesarean section is accounted for more in the treatment of eclampsia than in any other condition. An eclamptic patient is again a poor surgical risk. No surgeon would elect to do a major surgical operation on a patient in a like toxic state. Eden, in his review of the results in the treatment of eclampsia in Great Britain, finds that the conservative management of eclampsia gives twice as favorable results as does caesarean section. And this from England where but a few years ago the immediate emptying of the uterus by caesarean section or otherwise was the vogue. The Strogonoff treatment is growing in popularity the world over but has not yet been generally adopted in general practice where it is most needed. Caesarian section holds a rightful but limited place in the management of eclampsia. Generally speaking the operation should be performed in primapara with an undilated cervix and where the patient fails to respond to conservative measures.

Strogonoff with his mortality of eight per cent is in marked contrast with that of 26 to 32 per cent in caesarean section. The conclusion is inevitable that conservative treatment gives the best results and that caesarian section should be reserved for the exceptional case. Eclampsia is a preventable disease and with well-directed prenatal care can almost be made obsolete. In institutions where prenatal care is best practiced eclampsia is seldom seen. In reviewing recent literature we are forced to the conclusion that the cause of eclampsia is yet unknown and that there is nothing new in the way of treatment. At the present time it is to prenatal care in the prevention of the eclamptic attacks that we look for improved results. If we wait for the storm to break we invite disaster. Eternal vigilence throughout the period of pregnancy in respect to the kidney function, blood pressure and body weight is the watch word. The normal blood pressure of a pregnant woman is 95-100; anything above 125 bespeaks trouble. Albuminuria usually follows heightened blood pressure. A gain of twenty-five pounds throughout the period of gestation is normal — more than this suggests fluids accumulating in the tissues.

PERNICIOUS VOMITING

Another phase of toxemia in pregnancy deserves passing mention — that of pernicious vomiting. Here the pitfall that may entrap the unwary physician is again the failure to recognize the toxic condition in its earliest stages and the patient is permitted to progress to a point where even the emptying of the uterus will fail to save life. There comes the time when the induction of abortion will not only fail to save the life but will actually hasten death. Where conservative measures have failed, where rest, isolation, eliminative treatment, diet and sedatives and with the possible addition of insulin, luminol, corpus luteum, glucose and whatnot have one and all failed, the uterus must be emptied. The operation should be done before the pulse has mounted to 100, before albumen appears in the urine and before a temperature has developed. Neither haste nor yet too long delay can be contenanced in the management of pernicious vomiting. Where conservative measures have failed the emptying of the uterus will seldom fail if done in time.

PRENATAL HEMORRHAGES

It is not always possible to assign a definite cause for the premature separation of the normally implanted placenta, but it is a significant fact that a large percentage of these cases are toxic. Indeed, we may now say that the etiological factor in both the concealed and the external hemorrhages is usually toxaemia and if this premise is based on fact then such hemorrhages fall into the category of preventable accidents and demand prenatal supervision as truly as does the development of eclamptic seizure. In the external hemorrhages the loss of blood while prolonged is usually moderate in amount. As a rule the life of the fetus is not jeopardized because of the limited separation of the placenta. Such cases are best treated conservatively by rest, diet and eliminative treatment. The diagnosis and treatment of concealed hemorrhage is not so simple. Many of these cases are not clinically demonstrable because of the small amonut of blood lost, but it must be borne in mind that the mother may show no ill effects from the formation of a retro-placental hematoma, but so much of the placenta may be separated as to cause the death of the fetus.

Where the loss of blood is great we have one of the most formidable conditions which can possibly confront an obstetrician. We are dealing first of all with a toxic patient. The blood does not escape because the uterus has lost its contractile power and so passively dilates to accommodate the blood. Not only is more or less of the placenta separated, but there may be necrosis of the uterine musculature, with blood extravasation throughout the uterine wall and even to the broad ligaments and peritoneal cavity. If perchance the uterus regains its tone, then the blood will be forced through the cervix. The most characteristic symptom is severe abdominal pain associated with varying degrees of shock. The uterus is felt as a hard mass, tender to pressure and at times greatly increased in size. No fetal parts can be discerned and no fetal heart tones heard. Restorative measures should be employed while shock persists. As the patient comes out of shock the uterus may regain its tone and if so the blood will be forced through the cervix. Then is the time to reduce the intrauterine tension by rupturing the bag of waters and to pack the vagina. Rupture of the bag of waters before the uterus has regained its tone would serve to increase the blood loss. Where shock persists in spite of restorative measures, there is no alternative but abdominal section. Caesarean section is then the only resort. Where the uterus is extensively infiltrated with blood it is best to do a hysterectomy, perilous as the procedure may be.

I have dwelt somewhat at length upon this subject because it is one of the tragedies of obstetrics and is commonly overlooked. It will become more generally recognized when it is known to be a concomitant of toxaemia.

PLACENTA PREVIA

There is no general agreement as to the best method of treating placenta previa. Certainly caesarean section is not generally applicable; many cases do not require such heroic measures while others are unfit subjects either because of extreme anaemia or infection. It is quite possible to overtreat these cases. As a general rule it may be stated that where the placenta cannot be palpated through the two finger dilated cervix, the loss of blood will not be excessive and no more than rupture of the bag of waters to permit the head to compress the placenta is required. In lateral implantations where the placenta can be reached with the finger inserted through a partially dilated cervix a greater loss of blood may be anticipated, but the outlook for both mother and child is very good provided proper treatment is carried out at an early stage and this means before there is an excessive loss of blood. In such cases more is required than the rupture of the bag of waters. In the hands of a skilled operator with all conditions favorable doubtless caesarian section will afford the best results for mother and child. Certainly this is true of complete placenta previa. In the hands of the average practitioner and under the conditions which usually prevail, the safest procedure will be to control bleeding by plugging with gauze or hydrostatic bag, awaiting complete dilatation and then delivering with forceps or version and extraction. More important than the particular form of treatment is the conduct of the subsequent labor. Once having controlled the hemorrhage by rupture of the bag of waters or the plugging with gauze or bag, it is best that labor should proceed slowly and with the least possible interference. Deliberation and not undue haste will favor thrombosis at the placental site and a completely dilated cervix is the best insurance against lacerations. Quick deliveries after the control of bleeding are not necessary and may be most harmful. Few women die from loss of blood after delivery, but many die when a quick delivery is effected after a blanching hemorrhage. It is the shock of delivery superimposed upon acute anaemia that kills. Given a patient blanched from loss of blood and subject her to manuel dilatation of the cervix followed by rapid version and extraction and a fatal issue is almost inevitable. The least possible interference compatable with the control of hemorrhage is the best treatment. Caesarean section should never be done on a blanched patient. Version and extraction may add much to the shock while plugging with gauze or bag, if properly done, will effectively stop the bleeding and afford time for restorative measures.

PUERPERAL SEPSIS

Puerperal sepsis remains the chief cause of maternal deaths in childbirth. Approximately one-third of all deaths in the parturient woman are chargeable to infection and there is no appreciable lessening in the incidence of child-bed fever, nor has there been any marked improvement in treatment in the past two decades. An immense amount of work has been done on the etiological problems, but we know little of the factors involved in defense. Why it is that in two apparently identical cases one will die, the other will escape with a mild type of infection is little more than a conjecture. It is a matter of common knowledge that an individual with low vitality is a poor risk when infected, but just what constitutes immunity and defense is little known. We have long known that there is a cellular defense in the decidua. We call this a granulation zone, composed as it is of leucocytes which have the power of devouring living microorganisms capable of causing wide spread infection were there no local defense. The curet, blunt or sharp, will break down this defense and disseminate the infection and is generally condemned as a harmful instrument.

But what of retained placenta? Is it not a source of infection and how best to deal with it? Well, in the first place, placental tissue is rarely retained — not once in a thousand cases. And in the second place it is rarely infected unless the infecting organisms are carried into the uterus by hands or instruments. Retained placenta is significant in causing hemorrhage and only rarely does it cause more than a mild type of sapraemia in the absence of intrauterine manipulations. If placental tissue is retained it must be removed and with the least possible disturbance. This is best done with the fingers with the patient anesthetised. Sepsis is not an indication of retained placenta and in the absence of bleeding the uterus should be let alone. That puerperal fever may be intensified by unnecessary exploration is generally conceded. An otherwise local and comparatively harmless infection is made wide-spread and dangerous by the breaking down of the local defense. The manual removal of the placenta has always been considered a dangerous procedure because of the liability of carrying virulent organisms directly to the puerperal wound at the placental site. The morbidity of such a procedure is near 50 per cent and the mortality is greater than that of caesarean section.

Perhaps three-fourths of all maternal deaths are preventable and if this be so then we must look for improvement along educational lines. Better educational facilities for the undergraduate student of medicine, for the postgraduate student and for the midwife. Furthermore, the public should be educated to appreciate better obstetrics. All this will lead to more thorough prenatal supervision which is the *sina qua non* of improved results in obstetric practice. The Committee on Maternal Welfare contends that obstetrics is not being given a due proportion of time in the schedule of our medical schools. This committee made a survey of most of our medical school and found that general surgery, exclusive of the surgical specialties, is allotted 18 per cent of the schedule while obstetrics is given but 4 per cent. And yet they affirm that in the practice of the family doctor 50 per cent of the time is devoted to general medicine, 35 per cent to obstetrics and 15 per cent to minor surgery, life insurance examinations and the like. The suggestion follows that obstetrics should be given at least 15 per cent of the scheduled time, that little if any time should be taken from surgery but that the additional time allotted to obstetrics could well come from a portion of the hours now devoted to surgical and medical specialties.

THE TREATMENT OF BONE AND JOINT INFECTIONS OF THE FINGERS

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Since I have become interested in the simplification of methods in the treatment of bone infections, my attention has been attracted to many conditions which were not considered at first. For example, I have found it possible to obtain much better results and by much simpler methods in the treatment of acute and chronic infections of the phalanges. We have all had many experiences with the ordinary methods (wet dressings, etc.) in the treatment of acute osteomyelitis (periostitis or felon) of the fingers. We have all seen simple incisions (often too superficial) and the application of wet antiseptic dressings followed by days or weeks of pain and disability and ultimately by considerable loss of tissue and prolonged or permanent disability. By the simpler method, which I now employ, the patient has a minimum of pain, a greatly shortened period of disability and usually no bad after effects of any kind.

As soon as the patient is seen with an acutely inflammed, swollen finger, treatment is carried out as follows: Under gas or ethylene anesthesia and with the finger well painted with tincture of iodin, incisions are made on each side of the finger the full length of the affected phalanx and through the periosteum. No curetting is done but with a probe or forcep it must be made certain that the subperiosteal area is thoroughly drained. No tubes or wicks are put in but a vaseline gauze dressing is placed lightly about the entire finger. Outside of this a wet alcohol dressing is put on. Then the entire hand is bandaged firmly but not tightly on a full length hand cockup splint with the hand moderately dorsiflexed and the fingers slightly flexed. This splint is not to be removed nor are the dressings to be changed for a week. If there is any return of the throbbing pain or other signs of continued inflammation the affected finger may be kept moist through the dressings with 95% alcohol. On no account, however, except for evident extension of the infection to other parts of the hand and arm are the dressings or the extremity to be disturbed.

If secondary abscesses become manifest, incision and dressing followed by careful splinting should be done in the same manner. If this method is followed exactly complete healing without complications of any kind will usually occur in about a week.

In advanced cases where necrosis of bone has already occurred the technique is exactly the same except that at the primary operation dead bone, if any, should be removed and the period to elapse until dressing is done should be longer —two weeks at least.

Thorough drainage (not removal of all infected tissue) and efficient immobilization during the process of healing are essential to the complete success of this method.

If, at the first dressing, healing is found to be incomplete the wound should be cleaned up with iodin, a vaseline dressing should be put on and again allowed to remain undisturbed in the splint for at least one or two weeks. Healing without complications and with a minimum of disability may then be confidently anticipated.

ILLUSTRATIVE CASES

1. Mrs. T. who had recently had an infected finger for a number of weeks presented herself with a typical felon of the first finger of the right hand. She had been in great pain for two days and had a severely inflammed finger and hand. The second phalanx was incised in the manner described and a few drops of pus evacuated. No secondary dressings were done. When the splint and dressings were removed at the end of one week healing had occurred.

2. A child was brought in with a greatly swollen finger and the typical lesion of a tuberculous dactylitis. This had been treated for months with ointments, antiseptics, etc. The lesion was thoroughly curetted iodin and alcohol were used only at the time of operation, a vaseline dressing was put on and the hand and arm carefully bandaged into a splint. No dressing was done for three weeks. At the second dressing three weeks later the swelling had disappeared and the finger was healed.

One winter night, when the ground was covered with sleet, and the rain was freezing as it fell, the old doctor received a very late call from a family living way on the other side of the city. It was after one o'clock when he left home, and his horse—this was in the old days—slid all the way to the patient's house.

He got there about three o'clock, and found that a girl in the household had a severe cold. It was nothing dangerous.

"How long has she had it?" asked the doctor.

"Three days," answered the mother.

"Why didn't you call me in the daytime?" asked the doctor.

Then came the answer, which made this the favorite story of the Medical Society for many, many years:

"We are poor people, and we aren't able to pay very much, so we thought we would call you when you weren't busy."

WHO SHOULD REFRACT?

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Certainly only the person qualified by training and experience should attempt this important and often vital service. The day is past when any physician who happens to have a trial case, any jeweler, drug clerk, or itinerant spectacle vender can meet the demands of the public with reference to this phase of our physical care.

It is not our purpose to criticize the honest efforts of any one be he physician or optometrist who is endeavoring to render high-grade refraction service to the public. There are those in the medical profession who state with the utmost positiveness that a medical degree is an essential requirement for a refractionist. Certain members of the optometric group are just as strongly convinced that no one should be allowed to refract who does not have a diploma from a recognized school of optometry and a license from the board of optometry of the state in which he wishes to practice. Some of them have attempted to secure legislation to this effect while others are insisting that the optometrist be granted the right to treat external eye diseases, make urinalysis, take blood pressure, etc.

Between these extremes there are those from both groups who are honestly and earnestly endeavoring to raise the standard of excellence among their members. Among physicians the National Ophthalmological bodies through the National Board of Ophthalmic Examiners have done much to standardize not only refraction but other phases of ophthalmological practice. A considerable number of medical departments of our universities throughout the country are offering systematized courses in refraction to members of the profession who care to avail themselves of this service.

Optometric educators have done much to raise the standard of their group. Stringent entrance requirements to the better schools, a well balanced course of study of from two to four years, evidence of proficiency essential for graduation, and willingness to subscribe to an adequate and just code of ethics before admission to many of the state organizations are facts not generally appreciated by the medical profession.

Should the physician do refraction? If he is willing to prepare himself to do satisfactory work, he most certainly should; otherwise, not. In the days when his competitor was an untrained jeweler or drug clerk and opportunities for improvement were meager, inexact methods may have been excusable but this is no longer true. The public is quick to recognize evidence of training and unless we as physicians can show definite evidence of proficiency, we can blame no one but ourselves if we fail to hold the allegiance of the public in this field. If you are going to refract be sure you know how.

The medically trained man has a distinct advantage over the one not so trained in that he is qualified to consider the eye in its relation to the other body functions. Putting a pair of glasses on a patient is often the least part of the treatment necessary to clear up the symptoms complained of. The relation of the eye to nervous circulatory and eliminating systems is of necessity a closed book to the person who has been trained to study the eye as a more or less detached entity. True, if he is a close observer, he will recognize that there is something else the matter that is not corrected by the glasses and if he is conscientious and has the welfare of his patient at heart, he will refer him to the medically trained man. However, there is a real temptation to attempt correction by non medical means and thus lose valuable time with sometimes irrepairable damage to the patient.

The responsibilities of a refractionist are not to be lightly assumed. The proper development of vision in both eyes of the highly hyperopic infant, the normal mental and psychological progress of the school child, the efficient activity of the adult, and the happy contented years of old age may all be thwarted through inefficiency on the part of the refractionist. Failure to recognize muscle anomalies, variation in tension, intra-ocular pathology, etc., may easily result in loss of the patient's efficiency or even of life itself.

Of two hundred and twenty-eight answers from general practitioners in Nebraska and Iowa to the question 'Would annual intensive courses in refraction conducted by the State University Medical Schools be of benefit to the physician in general practice who is doing more or less refraction?', two hundred and eleven were "Yes." This does not mean that if such courses were offered that all of the two hundred and eleven would register for the first session but it does indicate that there is a desire on the part of the physician to increase his efficiency in this very important phase of our work and that a closer co-operation between the general practitioner and the state medical teaching centers would be mutually valuable.

The public has a right to expect and to receive satisfactory refraction from the medical profession. If you do not care to do refraction yourself there is some phyisician within easy reach who does. Your patient is entitled not only to accurately fitted glasses but also to the opinion of one who by training and experience is able to consider the eye not as a more or less detached mechanical structure but as an integral part of the body intimately associated with its various functions and systems. Without this knowledge it is in many instances impossible to form an accurate conclusion as to the need of the patient.

NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST AND A. J. MILLER, M. D., PATHOLOGIST

Edited by
L. L. Davidson, M. D.

CASE NO. 20596 AND 21190. Nov. 12, 1926.

A farmer, married, age 27, was brought to the ward on a stretcher, October 26, 1926, appearing:

Very pale,
Dyspnoeic,
Very weak.

He was admitted to the medical service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: The patient had been in the University Hospital during the latter part of August and September, 1926, because of transitory pain, swelling and redness of the joints, particularly the right knee and elbow. This attack lasted about seven weeks. His temperature had been as high as 101 degrees but was normal for a week before discharge. His pulse had been as rapid as 110 but was 80 on discharge. The heart was not enlarged but there was always a soft systolic murmur heard best at the apex followed by a normal second sound. A diagnosis of mitral insufficiency was made. A search for foci of infection showed some abscessed teeth and the patient had been advised to have these removed. During his hospitalization the joint pains had markedly improved under rest in bed and salicylates. The patient had been gradually allowed more privileges and was being allowed up in the wheelchair daily at the time he went home alone against orders. He had been cautioned against exertion but it was learned that on going home he had done considerable walking around.

On the fourth day after leaving the hospital, chills, fever, and general malaise developed. He has been confined to bed since this time.

One week before entry the left knee and elbow became painful and reddened but did not swell. They were bound in cotton because of the pain. At the same time he complained of pain in the left chest which was severe and aggravated by deep breathing. This pain he referred to the heart. Apparently he had been taking digitalis for a week before entrance with nausea during the week.

Patient was brought in by auto, 90 miles, dyspnoea rapidly developing while on the way.

PREVIOUS HISTORY: There is no antecedent history of sore throat, tonsillitis, rheumatism nor venereal infection.

FAMILY HISTORY: Wife living and well, two normal children, no miscarriages.

PHYSICAL EXAMINATION: A weak, pale, young man propped up in bed because of marked dyspnoea.

Head: Pupils react to light. Tongue is brown, dry and fissured. No nasal obstruction, sinus tenderness, nor alteration in hearing noted.

Neck: Visible pulsations in the neck but head does not shake. Anterior cervical glands are not felt.

Lungs: There is symmetrical expansion, normal fremitus, vesicular breathing throughout and no impaired resonance in the bases.

Heart: Deep cardiac dullness extends to the left anterior axillary line. There is no thrill. Apex beat is diffuse and weak. There is a loud systolic blow heard over the entire precordium but is loudest over the aortic area and is transmitted into the vessels of the neck. Pain over the precordium is accentuated by pressure made along the costal border. The rate is completely irregular, averaging 85, and the pulse is easily compressible. There is no pulse deficit. The blood pressure is 94/64 in the right arm and could not be determined in the left arm.

Abdomen: Abdomen is tympanitic throughout. The liver, spleen and kidneys are not palpable.

Extremities: Left elbow and knee are very painful, but not swollen nor very reddened. There is considerable limitation of motion because of pain. The right knee jerk is present, but the left is not tested because of pain.

PROGRESS: His rapid exitus was entirely unexpected. Patient died eight hours after entrance and during this time the temperature was not over 100, the pulse rose gradually to 125 and the respirations increased to 28. He passed no urine while in the hospital. His fluid intake was limited to 1000 cc., an ice pack was placed over the precordium, morphin gr. ¼ was given for rest and caffein sodiobenzoate was ordered, gr. 7½ every six hours for stimulation. About five minutes before he died he was sleeping propped up. His pulse was regular, 130, and of good volume. He appeared to be in the best condition since entrance. A few minutes later he was coughing, choking and vomiting. His pulse was imperceptible and the heart tones were not definite. Adrenalin M viii were given intracardially without effect.

DR. A. D. DUNN'S DISCUSSION:

There are several lessons to be learned from such an experience.

The first question raised in my mind is, should the patient have left the hospital? Apparently he entered the hospital with the symptoms and findings of acute articular rheumatism, being confined in the hospital for seven weeks. During most of this time he was in bed but when the signs and symptoms of infection began to subside he was gradually granted privileges. Foci of infection were sought and their removal advised. Concerning this point there might be differences of opinion; but the advice was not followed out. An important point, however, that presents itself in this original illness is the unchanging heart findings. Not enough emphasis was given to that soft systolic blow at the apex. Often systolic murmurs are unimportant, but in the face of a receding infection a systolic murmur must not be disregarded.

Before his discharge two examinations should have been made. A blood count would have assisted in noting the severity of the infection and toxemia by the degree of anemia, or would have indicated the prolongation of the infection by the leukocytosis. An electrocardiogram might have given some measure of the myocardial damage that almost invariably occurs in rheumatic hearts. A physiological test such as a stationary run would have been of assistance.

In the original examination the diagnosis of mitral insufficiency was made. A soft systolic murmur was heard at the apex but nothing was said about the first sound. Knowledge of the first sound is important. It is unwise to hazard a diagnosis of mitral insufficiency without some evidence of a mitral stenosis. There were no changes noted in the character of the first sound, no presystolic thrill nor presystolic murmur. There was no evidence of mitral stenosis at that time.

After leaving the hospital against the advice of those in charge, the patient attempted to assume the average daily activities. In four days, he was again confined to bed with chills, fever and general malaise. Was this another infection or the lighting up of the one from which he thought he had recovered? Most probably there would have been a leukocytosis present in an examination at the time of discharge.

Re-entering the hospital four weeks later on a new service, he presented a different problem. There was a recurrence of the former rheumatic attack, precordial pain, dyspnoea, weakness and pallor. Visible pulsations were noted in the neck, but no decision was reached whether these were arterial or venous. If veins, the pulsation might have been due to a back flow and a positive venous pulse suggestive of tricuspid insufficiency noted. If arteries, the pulsation would have suggested an aortic lesion.

Mention was made that the cardiac dullness extended to the anterior axillary line. Such a description is inadequate. From it we cannot reconstruct the heart. It is always best in recording the size of the heart to record at least three measurements. Locate the apex beat as to interspace in centimeters from the midsternum. Measure, also, the distance the deep cardiac dullness extends to the right and left of the midsternum at the fourth interspace and at the second interspace, which gives some idea of the width of the aorta. From these measurements we can sketch the heart shadow and draw some conclusion as to its size and shape.

We must next know about the heart tones. In the record a loud systolic blow heard all over the precordium was heard loudest over the aortic area and was transmitted into the vessels of the neck. We would like to know more about the character of that murmur. Murmurs are adventitious cardiac sounds, not merely modifications of the normal, and it is necessary to know their time relationship to events in the cardiac cycle, their intensity, quality, pitch and timbre, and the direction of their propogation. They are also influenced by the position of the patient, his breathing and heart rate. Their interpretation is closely dependent upon the size and shape of the heart, and the presence or absence of palpable thrills or rumbles. Here, a systolic blow heard best over the aortic region, transmitted into the vessels of the neck and without a second sound does not necessarily mean an aortic stenosis but suggests the lesion. A diastolic murmur and a palpable systolic thrill would be helpful in diagnosing stenosis of the aortic valve.

The abdominal examination was negative but with acute dyspnoea and heart failure,. there should be a tender and enlarged liver. We can possibly read that interpretation into the pain elicited by pressure along the costal margin.

The brief description of the pulse is valuable. The rate was completely irregular, averaging 85, and the pulse was easily compressible. This fits in with the low systolic pressure but might be only an indication of myocardial failure. Again, it fits in with our previous assumption concerning the aortic valve. The typical pulse of aortic stenosis is the low tension, plateau pulse. There is practically no assistance from the laboratory. The examiner apparently did not suspect the serious condition of his patient. It is difficult in many cases to size up the patient on a single examination. One cannot estimate how fast a heart is breaking in one observation. In two patients in apparently the same condition, the outlook may be entirely different, for one heart might have been breaking only for twenty-four hours. But besides the time element, virulence of the infection, etc., there is the inherent capacity of the patient about which we know nothing. To fix approximately the time of exitus is exceedingly difficult and hazardous.

It would seem, therefore, that we are dealing primarily with an acute rheumatic fever occurring about four weeks ago, at which time the endocardium and myocardium were undoubtedly affected. Whether reinfection or the lighting up of the latent process occurred we cannot say, but the latter seems the most probable. The aortic valve was unquestionably affected and realizing the infrequency of a pure aortic endocarditis and the frequency of the mitral involvement in rheumatic endocarditides, inferring the existence of mitral endocarditis is a good bet but not a diagnosis. With both a mitral and aortic endocarditis there should be cardiac hypertrophy and dilatation, and passive congestion of the lungs, liver, spleen and kidneys. I would offer the following anatomical diagnosis:

1. Acute heart failure (immediate cause of death).

2. Endocarditis—acute vegetative. This diagnosis is based on an acute febrile condition with heart lesions and heart failure without other definite explanation for the seat of the infection.

3. Aortic endocarditis (stenosis) based on (1) the loud systolic blow heard best over aortic region and transmitted into the vessels of the neck, (2) the completely irregular pulse rate and its easy compressibility, (3) a low systolic pressure, and (4) absence of physical findings significant of other valvular disease.

4. Suspect mitral endocarditis by inference rather than physical findings. A powerful argument for mitral endocarditis is the acute rheumatic infections that have apparently been associated with the illness. It is extremely rare to have an aortic lesion due to rheumatic fever without a mitral lesion.

5. Myocarditis. Why? First, there was a rheumatic infection. Second, there was the rapidly progressive course. I do not think this man died from a mechanical heart defect but because his myocardium had been badly damaged by infection.

6. Polyarthritis.

7. Passive congestion of lungs, liver, spleen and kidneys. Quite possibly there was also acute nephritis because of the severity of the infection. Passive congestion with a heart laboring like this heart must have been laboring gives rise to anuria. There was no evidence of pleurisy. Other explanation of the pain in the precordium than from engorgement of the liver or pain incident to heart failure is wanting.

DR. A. J. MILLER'S DISCUSSION:

The body is well nourished and without edema. The abdomen contains about 400 cc. of clear straw-colored fluid and in the chest there is similar fluid amounting to 400 cc. on the right and 200 cc. on the left. The pericardial cavity contains 200 cc. of similar fluid in which are many flaky masses of exudate. There are old adhesions at each apex. The pericardial sac is edematous and blotched with groups of petechiae. The heart in situ extends 11½ cm. to the left and 4½ cm. to the right of the midline; the vertical diameter is 13 cm.

The heart weighs 580 gm. The pericardium is thickened and light-colored but has no fibrinous exudate on it. It contains many petechiae. The coronary arteries are not sclerosed. The contour of the left ventricle is rounded. The muscle of each ventricle is about twice normal thickness. The sectioned surface of the left ventricle reveals many small scars. There is moderate dilatation of the left chambers. The valve leaflets of the tricuspid, pulmonary and bicuspid valves are normal. Just above the medial leaflet of the tricuspid is a protruding mass 8 mm. in diameter. (See Figure 1). It resembles a vegetation but has a smooth surface. The aortic orifice is irregular and measures 8 mm. by 4 mm. It cannot be closed because of large, friable, vegetative growth which covers the leaflets, binds their margins together and almost fills the sinus of Valsalva. The two posterior cusps are eroded through at their bases so that artificial passage ways are made between the aorta and the left ventricle. A probe passed into the sinus of the right posterior cusp enters the vegetative mass in the right atrium above the medial tricuspid leaflet but does not break through. The probe also passes anteriorly around the aorta into a large hemorrhagic mass in the pericardial fat but beneath the coronary vessels. (See Figure 2). These vessels are carefully opened and examined but they are normal.

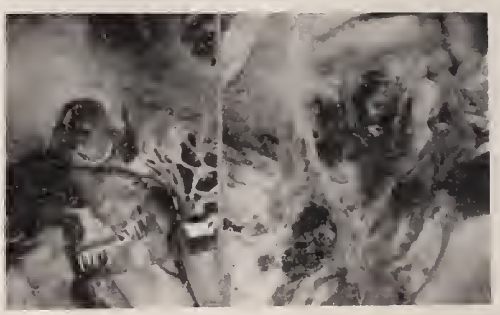

Fig. I. Fig. II.

Fig. 1. View of interior of right side of heart showing the vegetation mass that appeared just above the medial leaflet of the tricuspid valve. This mass is contiguous with the mycotic aneurysm shown in Figure 2 outside the aortic wall.

Fig. 2. View of sectioned surface of the left ventricle and the opened aortic valve. Note the large vegetations covering the aortic valve cusps and partly filling the sinus of Valsalva. A cross section of the mycotic aneurysm can he seen in the fat just above the muscle of the ventricle, below the aortic vegetations and outside the aortic wall.

The lungs are heavy; the left weighs 640 gm. and the right 820 gm. There is no evidence of infection. The increase in weight is due to edema and congestion.

The liver weighs 2300 gm. It is very soft and flabby and light colored.

The spleen weighs 520 gm. It is greyish-red in color, very soft in consistency and pulp flows freely from the sectioned surface.

The right kidney weighs 240 gm. and the left 260 gm. Both are light colored and finely granular. The sectioned surface bulges and rolls over the capsule. In the pelvis of each side there is purulent material. Blood vessels are engorged. The bladder contains about 8 ounces of turbid urine. It is acid in reaction, has a specific gravity of 1.030, is very dark in color, the albumin is two plus and there is no sugar. The uncentrifuged sediment contains many red blood cells, a few white blood cells and more than one cast to the low power field. The casts are fine and coarse granular. No cellular forms seen.

MICROSCOPY:

Heart: There are no Aschoff bodies in the muscle. There is cloudy swelling. Section of the valve lesion shows necrosis of tissue with a dense infiltration by leukocytes, most of which are polys but there are quite a number of plasma cells at the periphery. Fibroblasts are abundant at the margin of the necrosis. Organisms are not seen.

Lung: There is marked thickening of the parenchyma and congestion of the capillaries. The air sacs are filled with fluid in which there are many large mononuclear phagocytes heavily laden with blood pigment.

Liver: There is marked cloudy swelling. Near the central veins there is atrophy of the liver cords as a result of congestion. The blood sinuses are engorged. Here and there in the stroma are small collections of leukocytes, these are indicative but not pathognomonic of septicemia.

Kidney: Cloudy swelling is found here to an extreme degree. There are a few small, localized areas where desquamation is going on. The tuft vessels are congested.

Spleen: There is much blood pigment, some of which is recently formed. Polys are abundant in many parts of the section and there are many mononuclears of all types. The sinus cells are sloughing.

Blood taken from the right atrium at the time of necropsy remained sterile for seventy-two hours. Smears were repeatedly made from the vegetation mass but no organisms found in them.

Pathology found: Endocarditis of aortic valve with mycotic aneurysm; hypertrophy and dilatation of heart; hydropericardium; hydrothorax, bilateral; edema of lungs; chronic passive congestion of lungs, liver, kidneys and spleen; acute degeneration of kidneys, liver and heart; acute splenitis.

SUMMARY:

The immediate cause of death is myocardial failure. This sudden exodus from myocardial damage may occur in infectious diseases of any part of the body and are not peculiar to those of the heart and lungs only. The lesion is believed to be infectious in nature in spite of the fact that no organisms were found. This might be explained by reasoning that there had been enough resistance built up by the patient to kill the parasite but death occurred because of the damage already done. The same thing may occur in pneumonia, that is, a patient die in the stage of gray hepatization and the lungs found sterile at the time of post mortem. The organism is one that produces necrosis. The heart lesions of rheumatic fever are not characterized by necrosis or large vegetations. Aschoff bodies are absent here and the mitral valve is normal, so this condition is not consistent with rheumatic fever.

The acute degeneration in the liver, kidneys and heart and the acute splenitis are the result of toxins of infection. The passive congestion is secondary to the aortic lesion.

ACUTE PANOPHTHALMITIS: A CASE REPORT*

D. D. SANDERSON, M. D.,
Lincoln, Neb.

This case is reported and considered interesting because of the age of the patient and the apparent mildness of the infection that so rapidly terminated fatally.

Baby appearing to be in perfectly normal health since birth. The mother a multipara of good health had no difficulty during pregnancy. The labor was normal and without mishap or difficulty. Other children normal. Father of good general health.

Some members of the family had recently been victims of slight colds but not serious. The baby had not apparently been afflicted with any cold or grippe infection except a very mild coryza which was not considered serious or any cause for alarm. No temperature had been detected. The appetite was normal and generally the baby appeared to be normal. Seventeen days after birth the mother noticed the baby's right eye was somewhat congested. The 18th day the pupil appeared white; the eye more congested. Baby somewhat restless as if uncomfortable or in pain.

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*Reported under the title of clinical cases before the Nebraska Academy of Ophthalmology and Otolaryngology at its annual meeting at Omaha, May 10, 1926.

Dr. J. H. Downing was called and at once advised counsel. The eye was seen by us the afternoon of the same day approximately twenty-four hours after the first appearance of the congestion in the conjunctiva. The anterior chamber was filled with pus completely obstructing the view from the iris, pupil or posterior chamber. Tension normal as compared with the other eye. The lids, cornea, sclera and conjunctiva were normal except the mild conjunctival congestion. Temperature normal. Alkaline irrigation and atropine were used and continuous heat applied.

The nineteenth day the lids, cornea, conjunctiva and sclera were normal. Congestion receding, pupil becoming more visible. Baby appears comfortable, eats and sleeps normally. No evidence of pain or distress, alkaline irrigation and atropine were used and heat continued. The twentieth day, the lids, cornea and sclera normal. Conjunctival congestion receding. Pupil more visible. Baby generally appears normal. No evidence of pain or distress. Medication continued as before. The twenty-first day, the lids, cornea and sclera normal. Conjunctiva congestion receding, pupil more visible. General appearance good. Owing to the apparent good health and apparent improvement in the condition of the eye they returned to their home to continue under the observation of Dr. Downing who kindly favored us with the following report.

The twenty-second and twenty-third days, apparently continuing improvement. Baby eats and sleeps normally and appears to not be in any pain or distress.

The twenty-fourth day, about four A. M. the mother was awakened by the baby in a convulsion. The left eye that had been clear at all times was congested. The right eye remained unchanged. The left eye became more congested. The anterior chamber filled with pus, about twelve hours before the baby died, completely obstructing the view of the posterior chamber as had been done in the right eye seven days previously. The baby had repeated convulsions and died approximately thirty-six hours after the first convulsion.

A postmortem was not obtained.

Comments: Owing to the improbability of any definite bacteria being found no culture was made from the nose; no culture could be secured from the inner chambers of the eye ball; enucleation of the first eye was suggested but owing to the apparent improvement and the knowledge of marked impairment in development it was decided to continue less radical treatment. Probable conclusive diagnosis: Acute panophthalmitis of the right eye from blood stream infection, a result of acute coryza. Infection from the right eye extending backward between the sheaths of the optic nerve terminating in acute panophthalmitis of the left eye and meningitis.

A CASE OF GANGRENE OF THE LUNG*

C. H. WATERS, M. D., F. A. C. S.,
Omaha, Nebraska.

The case I am presenting is an instance of a serious and unusual anaesthetic complication. This young man was operated on in April, 1925, for duodenal ulcer, the ulcer being resected and a pyloroplasty performed. The anaesthesia was being badly taken due to excessive mucus, when suddenly an intense cyanosis developed accompanied with marked exaggeration of respiratory effort. At the completion of the operation his pulse was 140 and a few hours later his temperature rose to 101.

The following morning what appeared, clinically, to be a fluid accumulation, was demonstrated in the right chest. The temperature was then 102 and toward evening rose to 104 with a pulse racing between 140 and 160. He was seen by Drs. Dunn and Thompson whose first examination, as stated, showed clinical evidence of fluid in the right chest. The course of events justify the conclusion that during the course of the anaesthesia a plug of mucus blocked one of the branches of the bronchus producing in effect a rather massive collapse of the lower lobe of lung and in this zone there developed the pneumonic process which gave origin to alarming consequences. Two days later fluid was actually demonstrated by aspiration in both pleural cavities, some 200 cc. of clear fluid being drawn from each side. A day or two later the most distressing phase of a trying situation developed, namely a bilateral diaphragmatic pleurisy. The general condition became alarming, respiration 60 to the minute, very shallow and accompanied with great pain and incessant cough.

This phase persisted for several days and then an exceedingly pungent odor, noticeable throughout the hospital was traceable to his breath and the expectoration. An x-ray examination of the chest showed a shadow of fuzzy outline in the upper pole of the lower right lobe and deep aspiration demonstrated a small amount of purulent material of the same character as the sputum.

A thoracotomy was done, using local anaesthesia, and a cavity at least an inch from the lung surface was opened from which was removed a considerable mass of gangrenous tissue, greenish-black and of characteristic odor.

Improvement was prompt and at the end of six weeks drainage from the thoracotomy ceased, and the wound closed.

Five weeks later, however, the sewer-gas odor of the breath returned with an accompanying malaise. Aspiration revealed a refilling of the cavity and the drainage was again established through the old incision. For several months following it was absoluately essential to maintain external drainage as it was demonstrated that the cavity could not be evacuated by change of position or coughing. A very small drainage tube was kept in place and the cavity flushed with a few cc. of mercurochrome each day. This solution was promptly expectorated accompanied with moderate tracheal irritation.

This treatment was followed for three months and then, eight months since the beginning of his trouble, the tube was finally removed and the drainage site closed promptly. There has been no evidence of further trouble from this source. He has gained sixty pounds, thirty more than he ever weighed in his life, and is entirely free from digestive disturbance.

COUNCILORS' AUXILIARY COMMITTEE PLAN

The interest of the public in its health or the interest of the people in public health has been increasing from year to year until now there is a real demand for this service. Unfortunately the medical profession largely has been a follower in this advance in civilization and has with a hesitancy that borders on stupidness met this demand only when actually forced to do so.

The public's interest in its welfare is high. People have been taught that certain diseases are unnecessary and can be prevented; that periodic health examinations will detect minor illnesses and forestall major ones; that daily inspection of school children will prevent epidemics and nutritional clinics will improve health and raise individual resistance against disease.

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*Dry Clinic given before the annual meeting, Nebraska State Medical Association, May 11-13, 1926.

Families soon, if not now, will be demanding to be kept well; to be protected from diseases that are preventable, and naturally and with full confidence they turn to their family doctor for guidance and instructions in these matters. The medical profession should be the leader in every community in all activities pertaining to health, and State Medicine will never be a problem to combat if every physician does his duty to his patrons in matters of preventive medicine.

Already there are numerous organizations outside the profession which advertise health for sale. Woman's Clubs are conducting Baby Health Conferences and making recommendations as to diet, treatment of defects, etc. School nurses are diagnosing disease and referring patients who rightfully belong to the family physician, to free clinics. Breakfast food manufacturers are making this for diabetes, that for nephritis, something for everything but all of it for sale.

Life insurance companies do our advertising and casualty companies dictate our fee schedule in industrial accident cases. Too much and too long are we followers in matters pertaining to our own business, and it behooves us to get in the vanguard and lead, direct, and control these organizations and activities that pertain to public health.

No doctor wants State Medicine, except those perhaps, who fear honest competition and realizing their own inability have eyes on the public funds. Families do not want state medicine or any other kind save the best that science provides, for the confidence and faith that has been built up for years rests in the family doctor. Yet, in this new order of things, when it is possible to gain protection against diphtheria, small-pox, typhoid, cancer, tuberculosis, rheumatism, heart disease, venereal disease, the arthitides and nephritides, and this same family doctor fails in his duty to direct the way and provide this protection, they have the right to lose faith and look elsewhere for this service.

We must live in our age. We must serve the demands of our people and we must be active in these affairs of public health. At present we are dictated to by lay committees and lay governing boards, not so much because they wish to direct our affairs, as because we fail to take our places and assume the responsibility that is rightfully ours. Public health service and preventive medicine will be done and if we do not do it—someone else will.

There are a number of things other than those I have mentioned that should be brought before the public, such as the value of periodic health examination of the apparently well; a uniform medical practice act; improving the relations between the community and the modern hospital.

The public activities committee has gone over the various ways and means of reaching the public and has devised a plan which we submit for your consideration.

Each councilor shall appoint one man from each county society in his district to carry the programs from the councilor and public activities committee to their respective county societies and thence to the public. These committees shall be known as The Councilor Auxiliary Committee for Public Activities.

The county society appointees shall be selected from those particularly adapted to public health work, and their ability to interest their respective county societies in the various activities, and organize them into groups and sub-committees to best carry the information to the public.

The councilor shall be the chairman of his own auxiliary committee and shall call its members into meeting periodically to discuss the problems arising in individual counties and the district as a whole, and he in turn shall convey, explain and outline the plans and programs inaugurated by the state committee.

The state committee shall advise the councilors by correspondence or otherwise the paramount issues and make such recommendations for the carrying on of the programs as they deem helpful.

This plan of organization will call into service some 100 men from all parts of the state and if active ones are appointed on these committees, we should be sufficiently strong to carry our messages to the four corners and keep our profession in the lead of all activities pertaining to the healing art.

This committee must first arouse the doctors interest in himself, in his own welfare and in that of the profession as a whole. And from there carry the education to the public through Rotary clubs, Kiwanis clubs, Parent-Teachers' associations, Commercial clubs, Social clubs, School Boards, City Councils and Churches.

There are many things to be done, but there are a few of paramount importance which I think need our immediate attention.

First: We should lend our aid and assist The Campaign Committee in every way possible in putting over their legislative bill creating a Board of Examiners in the Basic Sciences. The Auxiliary Committee should be called into action to teach the public the construction and fairness in this bill until an overwhelming sentiment is created for it.

Second: There is more propaganda needed on the subject of Periodic Health Examination. Only a comparatively few are doing anything along this line and more interest should be stimulated, first among the profession and then its value carried to the public.

Third: There should be a concerted effort made to launch a state-wide campaign for the prevention of contagious diseases, particularly typhoid, small-pox and diphtheria. The existence of these diseases in epidemic form is inexcusable, for they can be prevented by simple immunization methods and the public will thank us heartily if we provide them this protection.

Toxin-Antitoxin campaigns are being carried on all over the country, and it is high time we made a concerted effort here. Kansas already has immunized 50,000 children against diphtheria through their State Board of Health. A creditable thing as far as accomplishment is concerned but by being done through the board of health it has taken $150,000 away from the physicians of Kansas.

The family doctor is the proper person to give this protection to his patrons and I feel sure that if a well directed campaign is carried on through this auxiliary committee we can immunize more people, more satisfactorily in less time through our medical profession than Kansas can through her state board of health.

There are other things the state committee will present to you during the year, but the one big thought we wish to impress on you now is the importance of all physicians taking the leadership in their communities in all matters pertaining to health and we believe this can best be done through The Councilors Auxiliary Committee.

—E. R. Hays.

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ROSTER OF OFFICERS

	Term Expires
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Dr. C. P. Fordyce, Falls City, Vice President	1927
Dr. Isaiah Lukens, Tekamah, Vice President	1927
Dr. R. B. Adams, Lincoln, Secretary-Treasurer	1927
Dr. W. P. Wherry, Omaha, Librarian	1927

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DELEGATES TO A. M. A.

Dr. A. D. Dunn, Omaha	1927
Dr. R. W. Fouts, Omaha	1928

DELEGATE, COUNCIL ON MEDICAL EDUCATION, A. M. A.

Dr. J. S. Welch, Lincoln	1927

MEDICO-LEGAL DEFENSE COMMITTEE

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Dr. Czar C. Johnson, Lincoln	1927
Dr. R. B. Adams, Lincoln, Secretary	1927

Note: In case of suit notify secretary at once.

HOSPITAL DIETS, DIETICIANS AND DOCTORS

It may be stated as axiomatic that when a patient's nourishment is so very scant it should be very tempting so that the patient may relish every bit of it. For this purpose, supposedly, physicians prescribe special diets, dieticians are employed to prepare the food and diet kitchens are provided in hospitals to facilitate the preparation of the special diets. And with what result?

Every physician who has patients in hospitals, has probably heard the complaints from patients that they did not like the food served and has dismissed the complaints as unworthy of consideration because, supposedly, they emanated from persons whose appetites were morbid, or who were unduly fastidious.

A scientific survey might be made if the reactions of physicians who have been patients in hospitals could be obtained, and if hospital doctors who prescribe the diets and dieticians who prepare the diets would subsist on those diets for periods of from one to two weeks and truly record there reaction thereto.

In the absence of such a survey it may be mildly suggested that when a diet of broth is prescribed and the prescription is made up of a cup of so-called broth, the top of which, from one inch to one and one-half inch deep, consists of pure grease—*a la oleum anserinum*—that prescription has been mis-filled. And this has happened!

When a patient on a low diet is served cauliflower, cabbage, lettuce, spinach, sans seasoning, and milk as his only allowance, day after day and several times a day, until he cannot longer,—from sheer disgust,—swallow either vegetables or milk, someone is at fault in not seeing to it that some of those vegetables are creamed with a part of the food value of the milk in the allowed diet, so as to make a palatable dish. And this has happened! But why multiply?

The average housewife serving food in such a manner would be considered in disgrace.

The general profession and the observant laity have always considered the diet kitchen a joke—and little wonder when such things happen. The fault is not altogether with the dieticians—the doctors must take a part of the blame, for lack of individual personal interest and occasional inspection.

When patients pay from forty to fifty dollars a week for hospital room and care they are entitled to a little human consideration. It may be perfectly ethical to throw alfalfa to a cow or slop to a hog; but the ethics of ordinary common sense should demand a little real personal consideration for the human patient on a special hospital diet. This is strong language; but it is well that we occasionally take notice.

While we are standardizing hospitals, doctors, nurses, let us not forget that diets and dieticians need something more than the appellation.

THE SHADOW OF STATE MEDICINE

Is the cloud of state medicine or compulsory health insurance, which we have visualized during recent years, retarding or advancing? If advancing, will the independent spirit of the American people ever tolerate such a system? Doctor Ochsner says that "Next to stability of government, honesty of administration and general intelligence of the people, the welfare of a nation depends more upon the quality of medical service, which is rendered to the people, than upon any one other thing.

The longevity, health, efficiency, and happiness of a people depend more upon the integrity, ability and industry of its medical profession, than upon anything else.

If it can be demonstrated that compulsory health insurance has lowered the standard of medical service, where it has been in force the longest, and is likely to have that effect if introduced in this conutry, then surely it would be unwise to introduce it here."

Previous to and during the early nineties Germany and Austria were among the leaders in medical advancement. Especially among their discoveries do we recall the diphtheria antitoxin although that was discovered by a Frenchman in 1894,—the x-ray by a German, Roentgen, in 1895 and in 1896 Lorenz, the Austrian surgeon, advanced the bloodless cure for congenital hip dislocation. Since 1896 the only discovery of any particular importance from those countries has been Salvarsan. That was discovered in the laboratory by a man, who had no actual experience in the practice of medicine. Is it possible that the retarded advancement of the medical men in those countries is due to compulsory health insurance destroying the independence and enthusiasm to such an extent that men of marked ability are taking up medicine as a profession, in lesser numbers?

Men who have been in contract practice for any period of time tell us that more than half of the calls they receive are unnecessary and the major portion of medical men soon cease contract work and go into private practice.

Is it believable that the independent spirit of the American people will either be satisfied with, or tolerate state medicine?

—H. E. Potter.

THE CANCER PROBLEM AND THE AMERICAN SOCIETY FOR THE CONTROL OF CANCER

A distinguished surgeon has recently said that cancer was "the greatest unsolved problem of Public Health today." Progress is being made in the education of the public as to the early recognition of cancer, and the American Society for the Control of Cancer is active in this direction. The Society is asking an endowment fund of $1,000,000. The active support of this endowment seems to be almost confined to the efforts of our Eastern colleagues. The fund lacks $350,000 of the goal, but R. Fulton Cutting of New York has promised to contribute $250,000 when $750,000 has been raised, thus completing the endowment,—and no doubt the $100,000 necessary to make this a fact will soon be contributed. This will produce a stable income of $50,000,—a necessary amount to maintain the National headquarters in New York. All of the work of the Society is done by volunteer workers.

In the treatment of cancer we all know the limitations of surgery, x-ray, radium, the actual cautery, and diathermy. Believing as I have always done, and now more strongly than ever, that cancer is a constitutional disease with a primary local focus of infection, I have no sympathy with those who decry against this position, because they are ever going around in a circle, have not accomplished anything, cannot accomplish anything, and in the face of this terrible malady, they throw cold water on those whose clinical experience makes them differ from them. The propaganda of the American Society for the Control of Cancer has accomplished some good; it is helping to educate the Public to recognize the earlier symptoms of cancer and seek professional advice at a time when the primary focus may hopefully be removed with a prospect of cure, or prolongation of life. Doctor Bloodgood of the Johns Hopkins University, an acknowledged expert in the diagnosis of cancer, recently made the statement in Chicago, that one hundred and twenty-five thousand people were dying every year in this country, from cancer. He also made the statement that 33 1-3 per cent of sarcomas were operated upon improperly by surgeons,—the tumors being simply eneucleated and not excised. This I believe to be true. Thousands of all types of cancer are operated upon improperly because too many poorly trained men are operating. A recent statement, attributable, I believe, to one of the Mayo brothers, was to the effect that twenty-five thousand men,—supposed surgeons,—were operating in this country, and that only about ten thousand were really competent. Quite probably this is true; therefore, statistically, surgical results are not what they should be, and until we obtain some medical treatment for cancer, the best propaganda that can be instituted will be the better training of surgeons, or the licensing of men to do surgery, who are really properly trained and experienced, not only to be good technicians, but to be men of good judgment, the latter being the more important.

"Everyone wants a doctor who has both judgment and knowledge, and the most that an examination can do is to test knowledge; it cannot test understanding."

It may be interesting to those who are not familiar with the situation to learn that Doctor Glover of Toronto-New York has recently published in the Canada Lancet and Practitioner a very complete resume of the cancer problem and given to the world his cancer researches, placing his cards on the table, faces up, so that others may be able to confirm or deny his claims. They are that cancer is caused by a specific micro-organism and that it fulfills all of the postulates of Koch's law. A curative serum has been made which is effective in the majority of not too advanced cases. He reports some fifty cases successfully treated by numerous physicians. Glover has a wonderful laboratory in New York. A wealthy man has backed him in his work to the tune of nearly $1,000,000. He had been able to keep secret his methods because no one, excpt his chief technician, knew the key to his work, *the cultrue media*. This is now common property and I am in a position to say that prominent laboratories both in this country and abroad, are now working to determine the value of Glover's researches.

It appears from a letter written by Dr. M. J. Scott,—a former assistant of the writer,—that after repeated promises of Glover to Scott, to give the world the formula, Scott and the technician, who claims to be the originator of the formula, quit Glover, and Scott published the formula. This, of course, smoked Glover out; hence his article in the Canada Lancet and Practitioner. The writer feels that this persistent urging of Scott to make Glover tell his story, and all of it, or quit him, had much to do with the smoking-out of Glover. However, recalling the meditations of Marcus Aurelius, "If he have sinned, his is the harm, not mine. But perchance he hath not. The best kind of revenge is, not to become like unto them."

—Jno. E. Summers.

NEGLIGENCE

One malpractice suit disposed of in January.

One new case filed in January.

Malpractice suits are predicated upon alleged negligence.

Negligence, in law, is something which a reasonably prudent person would not do under the circumstances or omitting to do something which a reasonably prudent person would do under the circumstances.

The question then is: Has something been done which ought not to have been done, or has something been omitted which ought not to have been omitted?

What was done or not done is a question of fact.

What ought to have been done or not done is a matter of opinion.

The physician cannot avoid testifying to a fact, but he can avoid volunteering to do so, and there is no law that can compel him to form an opinion.

No malpractice suit will be instituted or sustained without medical opinion.

"Facile est inventis addere."

—Czar Johnson, Medico-Legal Committee.

PROGRESS OF BASIC SCIENCE BILL

A great deal of enthusiasm has developed in favor of the Basic Science bill and also, as was well known, much opposition. The Osteopaths as an organization favor the bill; the Chiropractors are opposed to it. It is too early to forecast the probable action of the Legislature, but the indications are very encouraging.

The Senate Committee on Medical Societies, etc., gave a hearing February 17 to the several organizations directly interested in the fate of the Bill. Nearly a hundred medical men from diferent parts of the state attended and more than that number of cultists opposed to the bill.

The medical side of the issue was presented in a masterly manner by a number of representative physicians.

The reader can rest assured that the committees representing the Nebraska State Medica Association are doing all in their power to ge the Bill passed. If there is one single thing an member of the association can do to further th measure, he should do it. If any member ha not yet interviewed, personally or by letter, the representatives in the Legislature from his county, he should do so at once. One little effort may turn the tide.

BILLS OF SPECIAL INTEREST BEFORE LEGISLATURE

Of bills before the Legislature of special interest to the medical profession, in addition to the Basic Science Bill, are the following:

To provide for sterilization of the insane, feeble-minded, criminaloid and inebriate; to provide for more stringent qualifications for chiropractors; to provide that hospitals, physicians and nurses shall have liens for their services in the treatment of an injured person for any damages from the party causing the injury; to permit wholesale and retail druggists to sell intoxicating liquors on physicians' prescriptions; to amend Workmen's Compensation Act to provide that $200 shall be the limit for medical and hospital expenses.

WHISKY

Under the above caption, the editor of the *J. Michigan M. Soc.*, Feb., 1927, delivers himself as follows (and your editor feels like saying, Amen!):

We didn't say much last month regarding the United States Supreme Court decision upon the restriction of "one pint in ten days" prescription. We still feel it's a "hulla-bulu" (whatever that is) about something the profession had better have remained silent upon these past six or more years. Probably we'd better become mum right now. However, the court's decision has created so much medical journalistic comment that we are moved to the recording of the following deductions:

Time was when whisky was employed in medicine as a stimulant, but time has, as it so often does, proven that we can get along without whisky. Turning to hospitals and case reports we find that the morbidity and mortality is no greater in hospitals where liquor or whisky is not prescribed than in hospitals where it is used. Oh, yes, we know about champagne in nausea, sometimes it did do good, but so does a stomach lavage and a little attention to diet. Right down in your heart, you know that if the drugs we possess are ineffectual, whisky won't do much more. While maybe you can cite the case of pneumonia, "flu," diarrhoea or some other acute condition in which you credit whisky for saving the patient, you can't absolutely swear or prove it was whisky that saved the day. After all aren't we just too stubborn to want to give up whisky, loathe to place it in the discard, just as we were with a number of other pet remedies and formulas which the Council on Pharmacy and Chemistry revealed to us as being inert and useless? Yes, we are aware that eminent doctors testify and assert that whisky is a useful, valuable, therapeutic agent. But we recall also that similar eminent medical men gave testimony as to the extreme value of strychnine, cactine, aconite, and a dozen other now obsolete drugs and formulas. We have no fear that limitation on whisky prescriptions will increase mortality or intensify suffering.

The point is also made that the Supreme Court ruling invades the practice of medicine, encroaches upon the rights of doctors and institutes control and supervision over individual practice and therapeutic judgment—in other words, state or governmental control of doctors. Yes, in this single instance we grant that argument. Still, we are not inclined to become deeply alarmed, nor do we fear that our individual rights are to be further invaded, or that this is the opening wedge of governmental control. The members of the Supreme Court are not fools. They can see around the corner and are not lost or deluded by legal verbage. They are familiar with the Constitutional Amendment and the Volstead law. They also know what is going on in daily life, how whisky is being consumed as a beverage though it be obtained on prescription and we can't kid ourselves that any one of the justices was unconcerned as to existing conditions. They sought rather to inhibit the whisky traffic and not tell you what you can not prescribe as a doctor. We do not believe that should the question of chemicals, drugs, or morphine dosage ever be presented to the Supreme Court that that tribunal will ever rule or hand down an opinion that will restrict a doctor in their use or dosage. We are firm in opposition to state medicine or state control of medicine and will fight to the last ditch to defeat such attempts. We do not believe that this decision can be interpreted as a call to arms.

As a profession we will be far better off if we promptly close this whisky episode. If it's booze we want—well—Ontario went wet. Justice is ofttimes tempered with reason, also by conception of what actually is happening. The Supreme Court continues to merit our firm faith and our profession is not going to the dogs because of this ruling. Just let the teapot settle, the tempest can't cause a second flood. No, we haven't a New Year's hangover, either.

EDITORIAL PARAGRAPHS

The Sheppard-Towner Act has been extended to June 30, 1929.

The Radiological Review, Quincy, Ill., is a neat little magazine for the practicing physician rather than for the x-ray specialist.

Please notice that we have three new ads in the March Journal. The Eppley Hotels Co., Hettinger Bros., and Trowbridge School. Patronize the Journal's advertisers!

Fornat in "Peroral Resorption of Insulin," *Wein, Klin. Wochenschrift,* Sept. 23, 1926, reports insulin effacacious as an antidiabetic when administered perorally with bile, in the form of a pill.

Trade unionism is reaching out for the medical profession. In Chicago the 130 physicians in the employ of the health department have organized and affiliated with the American Federation of Labor.

A clinical survey of the colloidal lead treatment of cancer as brought out by Blair Bell, made by the Liverpool Medical Research Organization, indicates that there is promise of therapeutic benefit in a few selected cases of otherwise hopeless cancer.

The *Virginia Medical Monthly* for January contains a very interesting article on the "Last Illness and Death of George Washington." The author, Dr. Walter A. Wells of Washington, D. C., concludes that Washington's death was due to acute inflammatory edema of the larynx, rather than to diphtheritic croup.

The annual meeting of the Nebraska State Medical Association will be held at Lincoln, May 10 to 12; the annual meeting of the American Medical Association will be held at Washington, May 16 to 20. Nebraskans going to both meetings will do well to plan as for one continuous trip.

Maine is one of the few states that have not accepted the Sheppard-Towner bill and money. An editorial in the *J. Maine M. A.,* Jan., 1927, states that statistics for Maine for the past year show a greater decrease in infant and maternal mortality than in a great many states that have accepted the Sheppard-Towner act.

Dr. J. F. Montague, of the University and Bellevue Hospital Medical Clinic has invented a motion picture device by which motion pictures of the interior of such organs as the intestines may be taken at intervals, as, for instance a week apart while the patient is under treatment. By patching these strips together on a projecting machine the patient can be seen to get well before your very eyes.

The *Illinois M. J.* is authority for the statement that the most brilliant French students are forsaking the learned professions for business careers, because under present conditions a learned career means a life of gilded poverty. Honor graduates from the Polytechnique, among the greatest of scientific postgraduate schools, have an earning capacity inferior to that of a city street sweeper.

With the death about two years ago of Dr. Albert Abrams, the glory of the E. R. A. (Electronic Reaction of Abrams), rapidly vanished and with it also his dream of a college of electronic medicine for which he had planned an endowment. All that remains of his estate consists of about a thousand dollars worth of instruments and about two hundred and fifty dollars worth of books, says the *Calif. Med. J.*

Floersheim in *Calif. M. J.,* for December, 1926, reports a case of giant urticaria cured by tonsillectomy after every other known means, including 180 sensitisation tests and autohemic therapy and cool climate had been tried in vain. The patient was in a tuberculous sanitarium and with others had partaken of a dish of spiced chopped fish after which all who had partaken became ill. The urticaria developed during this illness.

The American College of Surgeons is about to undertake the standardization of Traumatic Surgery. A minimum standard has been adopted and Dr. Frederick A. Besley, Chicago has been appointed chairman to carry on the work outlined, provided the necessary financial support can be obtained. It is hoped to create an endowment fund for which thousand dollar contributions are solicited and it is also suggested that surgeons might feel inclined to make provision toward this endowment in their wills.

It has been named the *streptococcus cardioarthritidis.* Dr. James Craig Small, of the bacteriological laboratory of the Philadelphia General Hospital reports the discovery of a streptococcus which has a specific immunological identity, which has been isolated in the first instance from the blood of a patient suffering from rheumatic fever; from which a specific therapeutic serum may be prepared which is effective in terminating the toxemia and clinical manifestations of acute rheumatic fever, says the *J. A. M. A.,* Jan. 29, 1927.

A newspaper publisher who will sell his advertising space to give publicity to the most arrant quackery or fraudulant devises promising to cure all human ills is worse than the abortionist who tampers with human life for the sake of the dollar. A glaring full page example of this has faced us in the daily paper recently. One may reasonably expect common sense and the ethics of common honesty to govern the daily paper which ordinarily means so much to us. The medical profession does appreciate the paper that has the ideals and the stamina to turn down such advertising.

A RECENT VISIT TO MAYO CLINIC. ITEMS OF INTEREST AND COMMENT.

CLARENCE EMERSON, M. D., F. A. C. S.,
Lincoln, Nebraska.

(Continued from January Journal)

Dr. Pemberton performed several thyroidectomies at the Kahler. The anesthetic was novocaine (1 per cent) plus a little gas. The technic was very similar to the Kocher. The skin was reflected upward, the muscles cut horizontally and self retaining retractors applied. The superior thyroids were ligated at the upper pole and the gland elevated by finger dissection and traction. Clamps were applied about the periphery and the lobe excised. One-fifth was left on the right and one-fourth on the left. The chief dangers noted are post-operative hemorrhage and injury of the recurrent laryngeal. Dr. Pemberton ligates at each clamp and then applies a running overhand and mattress suture from pole to pole. Some precautions stressed by him were:

1. To avoid recurrent laryngeal: He says the common teaching that if you stay in front of the posterior capsule the laryngeal is safe, is erroneous. He says the nerve lies along the lateral wall of the trachea; that care should be observed to avoid stripping the lateral wall clean. The other point is observance of care in excising the lobe to prevent hemorrhage from the inferior thyroid. If this occurs, efforts to grasp it through the escaping blood may include the nerve. He advises completion of excision, ligation and suture of one lobe and before proceeding with the next have the patient out of the anaesthetic sufficiently to cough or speak. If the nerve is caught you will know which one is involved and can proceed to release the ligature. If this fails, extraordinary precaution should be used in excision of the remaining lobe.

2. To avoid hemorrhage: He always asks the patient to cough and strain before closure. Often an insufficient hemostasis will become evident. It is easier to correct then than a few hours later.

In their technic in thyroid operations, the cooperation between anaesthetist and surgeon is very interesting. When they cough there is generally enough vocalization to know whether recurrent laryngeal was injured or not and it shows whether strain would cause hemorrhage. Then if there was any injury to recurrent laryngeal, special care on the other side could be made.

In a short discussion of types of goiter he stated that those showing "thyroiditis", (just what his understanding of the term is, I explain below) very frequently went on to develop myxedema and that he knew of no way to avoid this. All cases manifesting "thyroiditis" are asked to return in three months and if myxedema appears to be developing, they are immediately put on thyroid extract. Eventually the physiologic processes compensate for the secretion shortage and symptoms of myxedema disappear in the majority of cases. The Mayos have encountered only eighteen to twenty cases of tuberculosis of the thyroid. Malignancy is present in about two per cent.

The pathologist returned a report with a specimen just removed showing carcinoma. I viewed frozen sections prepared by staining with polychrome methylene blue. The pathologist, an assistant to MacCarty, said that thyroid malignancy, though occasionally of very rapid metastasizing character, usually was slow in undergoing metastasis. Some of the secondary growths in bone have existed for years and carried on normal thyroid function and developed colloid containing acini. He, however, did not believe in the so-called non-malignant metastasizing goiter, but that in all such cases there was actual malignancy of slow growing type.

I asked for a classification of goiter. He named the following types:

1. Hypertrophic parenchymatous.
2. Adenoma.
3. Thyroiditis.
4. Adenoma malignant.
5. Malignant goiter— (a) sarcoma; (b) carcinoma.

He showed me sections of the so-called thyroiditis. There was atrophy and degeneration of parenchyma, leucocytic infiltration of the stroma and the stroma itself was increased. The section appeared to me to have about the histologic appearance of the atrophic-fibrous goiter described in Marine's and Crile's classification, in which myxedema also develops.

They use their own classification without trying to make them conform to the classification of Crile. The pathologist was not even familiar with the classification of Crile. Crile's conception of gradations of histologic change in the thyroid due to iodine deficiency, is not accepted by the Mayos. It seems that two clinics in which goiter surgery is such a prominent feature should have arrived at a more uniform classification of thyroid disease. The type of goiter that Crile might be discussing requires interpretation in terms of the types recognized by the Mayos, before intelligent comparison can be made.

Sistrunk stated that while they refer to the leucocytically infiltrated type as thyroiditis and look upon it as more definitely inflammatory, they have nothing to offer as to isolation of organisms. The value of special recognition of that type lies in the possibility of later observation for evidence of myxedema. No mention was made of delayed closure as practiced by Crile and avoidance of expression of thyroid secretion to diminish post-operative toxemia.

Dr. Harrington presented some interesting cases on chest surgery. With reference to empyema, he emphasized the importance of avoiding an early open operation. Repeated aspirations, if reduction of intra-pleural pressure is necessary or for diagnosis of the character of the fluid, was recommended. His views on this subject were exactly in conformity to those arrived at by the empyema commission in Camp Pike when I was there during the World War. In fact, the danger of early operation in empyema has been thoroughly recognized and proclaimed by older surgeons and yet its importance is intermittently disregarded. Perhaps the pressure against the pleural surfaces closes the lymphatics against absorption of toxins, and in all probability natural antibodies against the invading organism are developed. At any rate to wait until the pleuritic effusion is thick, creamy pus and the pleura thickened, very greatly lessens the surgical risk.

Dr. Harrington also stressed the value of eliminating tuberculosis as the etiologic factor in the pleuritis. Microscopic search and animal inoculation during the waiting period were advised. If tubercle bacilli are present the chest should not be opened since secondary infection and permanent fistula will develop.

Dr. Harrington employs the closed system of drainage by passing a catheter through a trocar into the pleural cavity. He employs various sizes of trocars and catheters, using as large as the intercostal space will permit. The pus is gradually withdrawn and the cavity is reaspirated and irrigated at hourly intervals in the day time and every three hours at night. After a few days the intervals are lengthened. Time to withdraw the catheter is usually two to three weeks and will be determined by almost complete disappearance of pus. (I have used this method several times with success).

In considering lung abscess he mentioned postural treatment and thorocoplasty. If spontaneous cure aided by postural treatment failed, then the operation of choice is thorocoplasty. He questioned the advisability of attempting to close fistulae that communicate with a bronchus, first because it was usually unsuccessful, and second because the sinus was an expression of deep seated trouble and it served as a safety valve. Closing of the sinus would lock up pus and harm the patient.

I noticed a disregard of effort to save the patient mental strain preoperative in goiter cases. They seem to feel there is no particular loss to the patient.

I inquired as to the value of blood transfusion in septic conditions. His reply was, "not of much value". The results, he said, had been disappointing. He had not employed "immune" blood. He stated that blood types change, necessitating retesting of prospective donors every six weeks, syphilis suddenly appears, etc. At the clinic most blood transfusions are by the citrate method, partly because of its convenience and partly because it has given satisfaction.

At the open staff meeting, Wednesday evening, Dr. N. B. Freeman presented very ably and clearly the subject of multiple myeloma of bone. The screen was used to illustrate the histologic findings and the x-ray pictures. It is much more common in men than women, and is often preceded by trauma. The distribution is predominantly in the thoracic bones and the skull. Histologically the specific cell type is a large spherical one with eccentrically placed nucleus and eccentrically placed nucleolus. It does not have generally the nuclear ratio that MacCarty finds in true malignancy. The Bence-Jones type of albumin is a characteristic urinary finding and this type of albumin can also be isolated from the blood. The roentgen picture shows multiple areas of rarefaction of circular form with sharply defined outlines.

Clinically, these cases usually have rheumatic-like pains for several months or a few years before the tumor formation or cachexia is evident. It was pointed out that in a case presenting rheumatism symptoms without joint involvement and especially if associated with albumin, that multiple myeloma should be suspected and test for Bence-Jones albumin and radiographic study should be made. A soft spot on the skull is quite characteristic. With reference to differential diagnosis the roentgenologic findings resemble metastatic malignancy from a possible concealed primary tumor. In the case of prostatic malignancy the metastases are more common in the pelvis bones while in myeloma the chest and skull are chiefly involved. (Mention was made that distribution of myeloma was the same as breast tumor, but my own experience indicates that the illii, sacrum and vertebrae are the most common sites of metastasis in breast tumor.) The outline of the rarefaction in myeloma is sharply demarcated, while that of carcinoma shades off and has a feathery margin. As distinction from fibro-cystic disease, the latter chiefly involves the shafts of long bones and myeloma involves the epiphyses and the skull.

Prognosis — all die. Treatment — none is curative. The x-ray gives the most amelioration. Surgery is out of the question because of extent and multiplicity except rarely for removal of tissue for diagnosis.

A report was made by P. W. Brown, on treatment of amebiasis. Attention was called to an apparent increase of infection due to entameba histolytica in the mid-west. Tables and statistics on several methods of treatment were shown. The best results as evidenced by a higher per cent of apparent cure (he did not say cure because of the great tendency to recur after apparent cure) were obtained by the administration of stovarsol per orem. The ease of administration and its greater economy of time and expense is decidedly in its favor. Twenty-five hundredths (.25) of a gram are given with meals t.i.d. for six days. This is followed by a rest period of ten days and the same course repeated a second and a third time. For prompt and almost spectacular relief from very acute dysentery emetine hydrochloride is effective but it often fails to eliminate the ameba. Using stovarsol, in five out of six failures there was ulcerative proctitis. A new German product had been used in a few cases with successful elimination of amebae in some that failed under stovarsol. The necessity of changing the treatment if results are not being attained, was urged. Previous to stovarsol, the best results had been attained by emetine and arsphenamine regime.

H. W. Meyerding reported on the program of the Orthopedic Section of the American Medical Association. He amplified the remarks already related under myeloma. In two cases of ununited fracture of the head of the femur a bone peg obtained from the fibula was passed through the trochanter into the head of the bone with good union resulting. I was very pleased to hear him refer in a very complimentary manner to my staff associate, Dr. H. W. Orr, of Lincoln. He described Dr. Orr's use of the small movie film recently put on the market and expressed the opinion that it would play a great part in the future in the teaching of medicine. (I was the first in Lincoln to use this method of presentation of a clinical paper, having worked up a film on goiter.) He also described in detail the method Dr. Orr uses of incorporating the adhesive extension strips in the plaster cast to maintain extension. The only objection offered by him was the possibility of the patient slipping in the cast enough to nullify the extension.

(To be continued)

WOMAN'S AUXILIARY, NEBRASKA STATE MEDICAL ASSOCIATION

The Executive Board of the State Auxiliary met at luncheon, February 16, at the home of the president, Mrs. Clarence Rubendall, Omaha, Nebr. Mrs. A. F. Jonas and Mrs. A. P. Overgaard, Omaha; Mrs. E. W. Rowe and Mrs. H. E. Flansburg, Lincoln; Mrs. F. A. Preston, Fremont; Mrs. F. L. Wilson, Stuart; Mrs. S. A. Swenson, Oakland; and Mrs. F. A. Long, Madison, were present.

The board voted unanimously to affiliate with the Nebraska Federation of Women's Clubs and with the Nebraska Antituberculosis Association. Mrs. F. L. Wilson, Stuart, was appointed a committee to investigate methods of cooperating with Hygeia.

Efforts are being made to bring Mrs. F. P. Gengenbach, Denver, president of the American Auxiliary, to our state meeting in Lincoln, May 10 to 12.

Send your dues, $1.00, to Mrs. S. A. Preston, Fremont, Nebr., at once.

Mrs. A. P. Overgaard,
Publicity Chairman.

WINNETT MEMORIAL LIBRARY

The Winnett Memorial Library at the Lincoln General Hospital in Lincoln, has made a remarkable growth during the past year. The library is developing along three lines: First, the entertainment and recreation of patients; second, for the nurses training school; and third, as a reference library for the staff. There are now nearly two thousand volumes in the library. The professional reference library has received several interesting additions recently.

The Misses Wilson, of Lincoln, have donated about two hundred volumes from the libraries of their father and grandfather, both medical practitioners. About eighty volumes of the Journal of American Medical Sciences and of the Medical Record were received as a gift from the Academy of Medicine of New York City. During the past few days Dr. A. B. Anderson of Pawnee has sent twenty-five bound volumes of the Journal of the Americal Medical Association. The members of the staff have contributed more than one hundred dollars, most of which has been spent for binding medical periodicals.

The library is desirous of receiving odd volumes of standard medical and scientific periodicals in order to complete sets. Physicians and surgeons throughout the state who have odd volumes that they do not care to preserve, are urged to write to the library in regard to them. Packing and transportation charges will be paid by the Library for any volumes needed.

THE SOCIETIES

The regular meeting of the **Lancaster County Medical Society** was held Tuesday evening, Jan. 18th, 1927, at the Cornhusker Hotel.

The application of Dr. Walter W. Carveth was presented to the society in final reading. Dr. Carveth was elected to membership in the Lancaster County Medical Society. The transfer card of Dr. Hornbrek from the Omaha-Douglas County Society was read to the society and Dr. Hornbrek was elected to membership in the Lancaster County Medical Society.

Dr. Rowe spoke to the society, extending an invitation to the reception and dinner to be held at the University Club on Thursday evening, Jan. 27th, 1927, under the auspices of the Bryan Memorial Hospital in honor of Dr. Winfred Grenfell of Labrador.

In the clinical program of the evening, Dr. J. J. Hompes presented in abstract the histories and lantern slides of seven unusual cases in the field of nose and throat surgery. These cases were unusual from the point of the technical difficulties entailed in the attaining proper functional results.

Dr. H. E. Flansburg, next speaker, reviewed an autopsy reporting of a case of mesentericthrombosis.

Dr. Everett Angle presented the pictures of four cases of renal pathology.

Dr. R. L. Smith gave a discussion on the technique of the proper x-ray of the vertebral column.

Dr. Bryan spoke on malignant hypertension and diuresis.

Dr. H. H. Waite spoke on the bacteriology of infection with the anaerobic organisms, following which Dr. H. H. Everett gave a discussion of a case of malignant oedma subsequent to compound fracture. Dr. H. H. Everett then discussed acute traumatic lesions of the abdominal cavity.

Following the professional program a buffet luncheon was served to the society.

—Arbor D. Munger.

The Omaha-Douglas County Medical Society met in the Medical Arts Auditorium, Tuesday, January 25, 1927.

Meeting was called to order by Vice President Overgaard.

A biography of Dr. Wm. H. Christie was read by the secretary, and expressions of gratitude given to Dr. Bert Christie for donating a picture of his father to the society.

Dr. Ray Fouts then presented a very interesting case report of Multiple Enchondroma. Dr. Max Emmert led the discussion, calling attention to the fact that Ewing describes these disturbances as Ecchondrosis, with the subsequent calcification and ossification of the tumor mass.

Dr. Robt. Schrock detailed a case of this same disease in a man 45 years old, leading a very active existence as a news dealer. His daughter has the same condition. He had also operated a boy of 12 with this same disease, who had disability in walking, due to the size of the tumor masses in the lower extremities. A resection of the tumor mass was done to give better play to the gastrocnemius muscles. A third case was seen at the University Dispensary. The woman died, an autopsy was performed, her tumor masses were diffuse, located in characteristic positions in all of the long bones, but she had as well a tumor mass at the base of the posterior process of the sella turcica. From pressure, this mass, gave her optic nerve symptoms.

The first paper of the evening was presented by Dr. J. E. Summers, on the "Treatment of Annualar Gangrene of the Small Bowel by Invagination vs. Resection." The discussion was led by Dr. Russell Best, who advocated peritoneal drainage plus intra-intestinal drainage. He showed that it had been proven that there was much less absorption from the peritoneal cavity than from the intra-intestinal. It is much more necessary to drain off the perverted secretion in the intestine than the secretions in the general peritoneal cavity. Dr. Donald Macrae of Council Bluffs also discussed this paper, referring particularly to the various ways of draining the abdominal cavity in cases of peritonitis. He also emphasized the necessity of intra-intestinal drainage. Dr. W. B. Christie complimented Dr. Summers on his ingenuity in cases of emergency surgery.

Dr. G. Alexander Young presented a paper on "Experiences with Malaria Treatment of Paresis and Cerebral Spinal Syphilis." He exhibited two cases treated by this method. Dr. J. J. Keegan was the first to discuss this paper calling attention to the fact that he thought most of these cures were due to the temperature reaction similar to those seen after mercurochrome injections, and also in foreign inoculations. Dr. M. C. Howard detailed the experiences he had in Vienna, at the Wagner Von Jarek Clinic where paresis was first treated by the malarial injections. Dr. Von Jarek first used tuberculin over a period of 2 or 3 months, but this was unsatisfactory. He then tried typhoid vaccine intravenously. This likewise, had little effect. He felt that he had much better results after the injection of plasmodium of malaria. Dr. B. W. Christie thought that the results quoted by Dr. Young were exceedingly good and did not feel so enthusiastic about this treatment. Dr. Willard Powell thought Dr. Christie too pessimistic, and invited him to come out to the Douglas County hospital, and see the changes which took place in these patients after being treated in this fashion. Dr. W. E. Ash, Council Bluffs, Iowa, then detailed his treatment of 18 cases of paresis and thanked Dr. Young for the malaria parasites given him, with which inoculations he treated his patients. Six of his cases were greatly benefited. Dr. G. A. Young then closed the discussion and the meeting adjourned.

Meeting of February 8 called to order by Dr. Frank Conlin, president.

Dr. Conlin: I want to take this opportunity of thanking you gentlemen. I wasn't here when you elected me president of the Medical Society and I want to thank you for having elected me, also for sending me flowers and telegrams. I came to Omaha nineteen years ago the first of this month and a week from that day I attended the Medical Society meeting and in three weeks from the first day I joined the Omaha-Douglas County Medical Society. I don't know of anything which has come to me since I came to Omaha which has pleased me more than the fact that you chose me president of the Medical

Society, and during this year we will try to keep up with the wonderful programs and meetings we have had in the past.

Drs. W. A. Killins and Stuart B. MacDiarmid were unanimously elected to membership.

The secretary read a brief biography of Drs. Augustus Roeder and R. S. Knode.

Dr. H. F. Johnson presented the first paper, a "Case Report—Fractured Acetabulum Complicated by Suppuration, Intrapelvic Abscess and Pyaemia, With X-rays and Charts." Post morten findings presented by Dr. A. J. Miller. Dr. Roeder opened the discussion. (To be published).

Dr. W. N. Anderson presented a paper entitled "A Review of Some Recent Presentations Upon the Epidemology of Tuberculosis". Discussion by Drs. Allen and Hamilton.

Dr. John F. Allen read a paper on "Therapeutic Pneumothorax", with case reports illustrated by x-ray.

—Earl C. Sage.

The Johnson County Medical Society met in Tecumseh, January 27 and elected the following officers: Dr. G. J. Rubelman, President; Dr. A. P. Fitzsimmons, secretary-treasurer and also delegate. The society is planning a monthly program and expects to act in connection with the Pawnee County society along this line, having alternate meetings in Pawnee county.

Dr. E. R. Hays, Falls City, presented a paper on the "Permanent Eradication of Diphtheria." The several societies in the councilor district have completed a campaign for the eradication of bovine tuberculosis, and now as they are going to save the cow, the medical fraternity thought it an opportune time to begin the campaign to save the children—one of the most valuable assets of the state of Nebraska, which have been long neglected. The stockmen do not hesitate to vaccinate their hogs against cholera, and are wondering if there is not going to be a serum to vaccinate the chickens against diarrhoea. Why neglect the kiddie?

—A. P. Fitzsimmons.

The annual meeting of the **Platte County Medical Society** was held at the Thurston Hotel, Columbus, January 11, following a fellowship dinner. The following officers were elected: Dr. L. C. Voss, Columbus, president; Dr. C. D. Evans, Jr., Columbus, secretary; Dr. J. E. Meyer, Columbus, delegate.

Subjects of mutual interest were discussed informally, there being no regular program.

The **Seward County Medical Society** at its annual meeting January 5, elected Dr. H. B. Cummins, president; Dr. O. C. Nickum, secretary and Dr. L. H. Lee, Seward, delegate. A banquet at the Windsor Hotel preceded the meeting. A Community Hospital was discussed.

The **Richardson County Medical Society** met at the Hotel Weaver, Falls City, January 7, 14 physicians being present. Dr. William Sheperd, Rulo, was elected president; Dr. C. L. Hustead, secretary-treasurer and Dr. E. R. Hays, delegate.

Papers were read by Dr. Wm. Sheperd, and by Dr. R. E. Cole.

The annual meeting and banquet of the **Red Willow County Medical Society** was held at the Keystone Hotel, McCook, January 11, Dr. G. A. DeMay, McCook, was chosen president; Dr. D. H. Morgan, McCook, secretary-treasurer.

A very interesting meeting of the **Otoe County Medical Society,** was held at the Elk's club, Nebraska City, January 17, thirty members being present. Dr. A. I. MacKinnon, Lincoln, spoke on local anaesthesia, in the use of which he is a pioneer. Dr. J. E. M. Thomson, Lincoln, spoke on certain phases of orthopedics.

HUMAN INTEREST TALES

The Pawnee hospital is to be enlarged by adding a third story.

The Iowa State Medical society will meet at Council Bluffs, May 11-13.

Dr. and Mrs. J. P. Lord, Omaha, spent a part of February at Miami, Florida.

Dr. and Mrs. E. H. Dwyer, Gordon, are spending several months in Honolulu.

Dr. Raymond A. Lower and Miss Pearl Campbell, Omaha, were married Christmas.

Dr. M. L. Wilson, Falls City, was ill and a patient at the Falls City hospital, last month.

Dr. E. O. Liston, Elmwood, was a patient at the Lincoln General hospital the last of January.

The addition to the Nebraska University hospital, doubling present capacity, is nearing completion.

The marriage of Dr. F. A. LeMar and Miss Rose Alderson, Humphrey, at Lincoln, January 31st, is announced.

Dr. G. W. Bartholomew has recently moved from Timber Lake, S. D., to Newport, Nebr., where he formerly practiced.

Dr. A. L. Smith, Lincoln, suffered broken ribs and other painful injuries in an auto accident near Steele City a short time ago.

Dr. and Mrs. Clark Alexander, Omaha, will sail for the Philippines about March 1st. Dr. Alexander is in the service of the U. S. Navy.

Dr. Sanford Gifford was elected vice president of the Sioux Valley Eye and Ear Academy, at the annual meeting held at Sioux City in January.

The new St. Mary's hospital at Nebraska City is nearing completion. It will be conducted under the direction of the sisters of the order of St. Frances.

Dr. and Mrs. D. C. Hilton, Lincoln, are about to sail for Naples where they expect to meet Dr. and Mrs. J. S. Welch. Together they will visit the Vienna clinics.

Dr. Nelson Mercer, London, England, native Omahan, and son of Dr. Samuel D. Mercer, one of the first chief surgeons of the Union Pacific railroad, visited in Omaha recently.

Dr. Wilfred T. Grenfell of Labrador, was entertained at dinner by the staff of the Bryan Memorial hospital and Lancaster County Medical society, on his recent visit to Lincoln, to lecture.

Dr. George G. MacCurdy, professor of anthropology at Yale, gave an address, illustrated by slides, on "Early Man in Europe", before 200 members of the Omaha-Douglas County Medical society, January 10.

Superior is to have a new 25-bed hospital, the gift of Lady Evelyn Vestry, former Superior girl, now the wife of Lord William Vestry, of London. The ancestral Broadstone home of twenty acres of land, and $32,000, have been given for the purpose.

Climatological Data, a monthly publication of the Nebraska Section of the Weather Bureau, makes honorable mention of some twenty local observers who have served the weather bureau in this state for over twenty years, among them being three physicians and the dates when their service began, as follows: Dr. A. S. van Mansfelde, Ashland, June, 1892; Dr. F. A. Long, Madison, October, 1894; Dr. P. H. Salter, Norfolk, June, 1897.

NECROLOGY

Barclay T. Trueblood, Kirkland (suburb of Seattle), Washington; State University of Iowa, College of Medicine, 1885; for a number of years prior to about twenty years ago, a practitioner at O'Neill, Nebr.; died January 5, of myocarditis, aged about 78 years.

Axel E. Hedlund, Dalton, Nebr.; Creighton University College of Medicine, 1908; practitioner at Dalton, 16 years; died in an Omaha hospital of organic heart disease after an illness of several months, aged about 47 years.

Annual Meeting, Lincoln Hotel, Lincoln, May 10-12

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THE ADVANTAGE OF NITROUS OXID-OXYGEN IN ORAL OPERATIONS*

B. H. HARMS, D. D. S.,
Omaha, Nebraska.

Whether nitrous oxid-oxygen is contra-indicated or indicated in any given case, depends upon the principles of administration and not at all upon the gases themselves. Its indications depend upon the ability and inclination of the operator and the condition and attitude of the patient.

A brief review of the indication for nitrous oxid-oxygen in general might not be out of place at this time before definitely stating the advantages of this wonderful anesthetic for oral operations.

Nitrous oxid-oxygen anesthesia is directly indicated in those conditions which are the gravest risks for operations.

In anemics it does not increase the blood dyscrasia and the vital oxygen need can be adequately met.

Blood pressure can be maintained in cardiacs and the operative procedure made a rest period instead of an exhausting ordeal.

Toxemias are not exaggerated, because nitrous oxid-oxygen is a physical and not a liquid-solvent anesthetic.

In diabetics, diet, insulin and nitrous oxid-oxygen are the essentials, in preventing post operative coma. In these cases nitrous oxid-oxygen anesthesia is indicated because it does not increase the conversion of liver glycogen nor hamper the kidney's excretion of sugar, acetone or diacetic acid.

Nitrous oxid-oxygen is particularly indicated in the weak and the debilitated in the pulmonary, cardiac and nephritic complications; in the anemic from old age or recent hemmorrhages in the inflammatory states and in old age.

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*Read before the Otoe County Medical Society, Nebraska City, Nebraska, October 11, 1926.

With these few brief, and, in a way, general remarks, I will proceed with the main subject of the paper by stating for you five outstanding advantages to the patient of using nitrous oxid-oxygen in oral operations and discussing each one briefly, assuming always that the proper principles of administration are understood by the operator and always carried out.

1. First nitrous oxid-oxygen is of particular advantage in those operations in the mouth which require the longest operative time and the most exacting surgical technic, such as the removal of deep impacted teeth, the alveolectomies and the surgical removal of teeth, the removal of cysts and the operation on the maxillary sinus.

It seems to have been firmly instilled in the minds of ninety-nine percent or more of both medical and dental practitioners that nitrous oxid-oxygen anesthesia in oral work can and should be used only in the short operation, and that none of the finer surgical technic can be properly and successfully carried out. The dental or medical school that teaches this subject any differently, either by lectures or clinical demonstrations, is the exception rather than the rule.

The rule should rather be that, the longer the operation and the more exacting the surgical technic the more the need of nitrous oxid-oxygen. The action of this anesthetic itself is definitely known and there is no other known anesthetic, either general or local, that so well (although not completely) protects the brain cells from shock and at the same time producing no tissue or chemical change in any organ or tissue cell. The greatest danger to the patient is the unknown ability or action of the operator or anesthetist.

In these lengthy operations the patient is always comfortable—there is none of the feeling of exhaustin that the patient gets after a twenty or thirty minute operation under the local anesthetic, even though the pain is not objectional, the retraction of the tissues of the cheek, lips and the body position maintained by the patient soon wears the patient out, and this is probably one of the greatest arguments, aithough seldom admitted, for the installment removal of teeth.

I believe(6) that the use of nitrous oxid-oxygen is safe, not in that it protects the nervous system from trauma, but that it does not per se exhaust the supra-renal glands and in that it removes the element of fright.

Fright is one of the greatest agents we have in epinephrin exhaustion. I believe that it is for this reason that depletion of the epinephrin content in the suprarenal glands occurs with local anesthesia, in spite of the fact that all patients operated on are handled as gently and diplomatically as possible. Most patients can go through local anesthesia operations without pain. They may smile, but it has been my observation that after operation the facies changes. The change appearance suggests shock. Further than this, I have seen shock follow operation with local anesthesia. This usually develops some time after operation, and as Harris says, "the patient flattens out."

The blood and saliva in all of these operations are best taken care of by the use of packs or gauze sponges in the hands of the operator or his assistant. By such means all of this adverse co-operation as demonstrated in a conscious patient, is prevented.

2. Second, the sitting posture is natural, convenient, and the safest position for these operations.

Any patient that for any reason has any difficulty in breathing, will always assume the upright or sitting position. This position does not embarrass the heart action or the action of the muscles of respiration as the prone position so often does. Mortison(1) has shown that the blood pressure will rise to from 5 to 25 m. m. of mercury, by simply changing the patient from the upright to the prone position, which is a point to remember in those cases of hypertension and cardiac lesions.

For the past ten years I have done mouth operations in no other way, and with a record of 20,000 cases, I have yet to see any unfavorable conditions, either during or after the operation, that could be attributed to the upright position. To quote Roberts(2) who uses this position for tonsillectomy: "This position, in addition to the advantage of having the parts in the position in which we are the most familiar with them, offers several other advantages."

(1) The ease with which the field of operation can be illuminated, either by an electric headlight, such as I use, or by natural or artificial light coming from behind and above the surgeon's head.

(2) The ready accessibility of the parts to be operated on.

(3) The freedom with which an assistant can hold instruments and can sponge the field of operation.

(4) The simple control of the hemorrhage

at its source, and the prevention of the entrance of blood into the larynx.

(5) The thoroughness with which the operative field can be examined for tonsil remnants (in this case tooth remnants), tissue shreds and bleeding points after enucleation.

(6) The ease of control of the patient's head by the anesthetist.

3. Third, nitrous oxid-oxygen does not, within normal anesthetic limits, abolish cough reflex, thereby preventing the inspiration of blood or infective excretion from the mouth or upper air passages, causing pulmonary abcess and gangrene.

There is no other anesthetic that does not abolish cough reflex on account of their greater power of relaxing muscular tissue, including the diaphram and the intercostal muscles, which produce the act of coughing.

In these oral operations where the nasal inhaler is used and the throat is packed off, there is no way of knowing how much mucus is drifting down the back part of the throat from the upper air passages. The epiglottis has often been called the watch dog of the lungs and if the cough reflex is active any material, whether it be mucus, blood, saliva or foreign substances, as teeth or particles of teeth, tissue, etc., will be expelled.

Inspiration of blood and secretion into the lungs is an immediate danger to the patient by asphyxiation, and a remote cause of pulmonary sepsis, and pneumonia. Various positions, such as hanging the head downward, placing the patient on the side and various aspirators and suction pumps have been devised, in attempts to exclude these secretions from the larynx, trachea and lungs, but with a proper throat pack to prevent the blood and saliva from entering from the mouth, the cough reflex can be depended upon, under proper nitrous oxid-oxygen anesthesia, to take care of the secretions from the upper air passages.

During the influenza epidemic of 1918 and 1919, when hospitals were postponing their operations, except their emergencies, and doing without ether, the work in my office was in no way handicaped, and except in one instance, where the patient proved to be a bleeder (hemophyliac) and unnecessarily exposed herself on a cold winter day, do I know of any post-operative pneumonias.

4. Fourth, nitrous oxid-oxygen does not interfere with the circulation and the oxygen tension of the parts, and secondarily does not cause edema, thereby increasing the susceptibility of the part to infection and auto-inoculation.

In a previous article(3) I have pointed out that—briefly, the result of my clinical experience has been, that when I used a local anesthetic for the removal of one or more infected teeth, the patient gets a more or less violent reaction or exacerbation of the existing infectious systemic symptoms, whereas, when using nitrous oxid-oxygen as the anesthetic, such reactions or exacerbations have been absent or slight, even though a larger number of teeth have been removed, the technic of the operation in either instance being the same. On the one hand, auto-inoculation from the extraction of one diseased tooth under local analgesia has been violent enough to place a seemingly strong and robust patient in bed in the hospital, while, on the contrary, I have taken a bed-ridden patient out of bed in a hospital and under nitrous oxid-oxygen anesthesia, have removed all of the teeth—sometimes twenty or more—from the mouth, with a great amount of root-end and peridental pathology presenting, without any noticeable reaction or exacerbation. Having carried out this procedure in many patients, and having checked up results with hospital records of these cases, it certainly seems that the choice of anesthetics in the extraction of diseased teeth is entitled to more consideration than has been given in the past.

My clinical experience, along these lines, has led me to believe that the interference of the local anesthetics on the circulation of the blood, has more to do with the violent reaction or exacerbation which follows the operation on infected areas, than any other factor. I do not believe that the small amount of local anesthetic used in these cases has enough toxicity to account for the striking results so routinely noted.

Members of the dental and medical profession have, for some years, been taught that when a large number of diseased or infected teeth were to be removed that it was, or is, dangerous to remove too many at one sitting; the theory being that too large a number of bacteria, or too great quantities of toxin are set free in the invaded individual and that they may too rapidly overwhelm the body defences.

In my clinical experience such untoward results have not occurred when the choice of the anesthesia has been given due consideration. An imperilling or disastrous result may, to a large extent, if not entirely, be prevented by the proper selection and use of the anesthetic.

Irons says that the resistance(4) of tissues themselves to the invading bacteria will also be a factor in determining whether the bacteria are quickly killed, or begin to grow. This bruised tissue, and tissue previously injured by disease, may be less resistant than normal tissues, and may, owing to interferences with the blood supply, offer conditions of oxygen tension different from normal tissue and thereby be a more favorable culture medium.

In using local anesthetics for an operation on infected tissue where the anesthetic, to a greater or lesser extent, interferes with the circulation to the part to be operated on, either by infiltration or nerve-block, the same conditions are produced artificially, as exist in bruised tissue, namely, interference with the circulation and oxygen tension, and thereby, lowered resistance of that tissue to invading bacteria.

Unless local anesthetics are most carefully used and trauma reduced to a minimum, there is much subsequent swelling of the injured part and great liability to infection. I do not know exactly, of course, why the infection occurs more easily in the injured tissues, but I am inclined personally to the view that, the lack of oxygen in the swollen tissue, aided, of course, by the good culture ground of blood and bruised tissue, tells the whole story. Nearly all of the organisms that produce these changes, are partial tension organisms, and to put them into a state of lowered oxygen tension, is to give them the advantage of development over that of the host.

The surgeon(5) today knows that the key to the defense against infection possessed by any part of the organism is, its blood supply; that abundant blood and normal blood augmented by physiologic rest supply the natural "asepsis."

This brings us to the fifth(5) advantage of nitrous oxid-oxygen in oral operations, the reason for which has already been explained, namely — any number of infected teeth can be removed at one sitting without the violent reaction or exacerbation which follow these operations on infected areas with other types of anesthesia.

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MEDICINE: A RETROSPECT AND A PROPHECY*

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The whole of European and American civilization has been changed in the last fifty years and this change has carried the medical profession along with it. The marked change in medical conditions has come about in the past quarter century and most of it in the last fifteen years, though the foundations were laid some fifty to sixty years ago.

In this discussion words will be used in their broad sense, that is medicine will include internal medicine, surgery, obstetrics, and the various specialties; politics will mean, not partisan politics, but the science of government; state will mean municipal, county, state and federal governments; and other words will be used in like manner except where specified.

The development of recent civilized thought may be divided into three phases comparable to the development of geographical knowledge:

First—Discovery.
Second—Exploration.
Third—Development.

Discovery means the finding of new territory and so definitely locating it that future explorers may determine its contents, examine its inhabitants and open it up for the development of its possibilities.

In geography Columbus was the first of the great discoverers and he in turn was followed by many others who opened a new world to the explorations which lead to colonization and development, thus opening the road to what we hope is the greatest civilization in human history. It is true that many minor explorations had been made prior to the time of Columbus, that the compass had been partially perfected; that boats were so constructed that they were moderately sea-worthy; but the fact remains that he was the first man to combine previously acquired knowledge with a vision and imagination sufficient to lead men into a new world. As is invariably true, this important discovery was followed by many others of immense importance, but based upon the knowledge brought out by the first one. The time from 1492 to 1600 was filled with discovery and this period was followed by exploration, that is by the determination to find and plan to use to its best advantage the natural resources of the new country; and this period, still later, by the era of development, in which time we are now living. A later phase of this idea of development has been conservation, or the careful and intelligent use of natural resources that they may not be unnecessarily destroyed, but used to the best advantage and as much as possible either retained or made better for posterity. The line between the various periods is well marked, but all were necessary to accomplish the final purpose.

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The progress of medical practice may well be compared to this line of development. For thousands of years of racial existence, humanity had groped in scientific darkness and its explorations had been of a random and uncertain character. Many scientific theories were advanced along many lines, but the fundamental discoveries of science had not been made. At various times in human history, as we look back upon it, we see that man was almost in possession of its most important achievements, that is a compass of scientific knowledge and a boat of clear thinking to carry it to its goal. But something always interfered, war, pestilence, oppression, luxury, one or another.

It was not until Darwin by his epoch making observations and conclusions built the boat that has carried us into biological knowledge that real scientific advance was made possible. It is true that some of Darwin's conclusions have been superceded by better ones, as have Columbus boats by the powerful ones of today; but it is also true that his facts have not been disproved nor his line of progress abandoned any more than have those of Columbus. With this revolutionary discovery of a new line of thought, applicable to all animal life and human thought, came an awakening of science that has lead us to our present place, with such impetus that a period of ten years shows more real advance now than a period of ten thousand years did during the greater part of the history of mankind.

Following the discovery made by Darwin there came many more of minor importance, but of great value, and these are still continuing though in lessened volume. Prior to this period a few important facts had been discovered, merely by sailing about and noting facts, and the chief of these were Harvey's discovery of the circulation of the blood, Jenner's development of smallpox vaccination and a number of anatomical facts by various anatomists; but these were facts assembled largely by empiric observation.

It must also be remembered that no knowledge comes out of clear sky, but is to a greater or less extent founded upon preceding observations.

After the scientific awakening of the "sixties" came the period of exploration, and the outstanding figure in this period is Pasteur, whose explorations into the factors of lower life forms has laid the foundation for all our present day medicine. He in turn has been followed by many ardent disciples and the field of communicable disease is now quite well explored.

The periods of discovery and exploration in medicine and the allied sciences are now almost past, though there yet remain a few places where these activities are still needed, exactly as there remain a few geographically unknown places on the surface of the earth.

This brings us to the period of development, in which we are now living, and which is in many ways the most interesting of all. The lives of the discoverer are full of interest and are sensational, but the life of the developer is the fuller and more effective.

The first of the great developers was Lord Lister, closely followed by Marion Simms, Lawson Tait, John A. Wyeth, Nicholas Senn, John B. Murphy, Reginald Fitz, and many others. These men opened a wide road to our present day activities in medical practice and we and our confreres are but following in their footsteps and continuing to develop along the lines laid down by them. It is true there are many departures from their ideas, we no longer think of the antiseptic sprays to which Lister attached such importance, in fact we have to a large extent left behind his antiseptic theory of technic and are more inclined to Tait's idea of thorough cleanliness, asepsis if you please. In this connection I might insert a personal anecdote: My father practiced medicine for many years before the advent of antiseptic surgery, and succeeded his father who had also practiced many years; my grandfather told my father that the man who was scrupulously clean in personal habits and carried that cleanliness into the delivery room but seldom has a case of puerperal fever while the man who was careless had constant cases of "childbed fever".

The periods of discovery, exploration, and development of medicine must be considered as contemporaneous with other developments of living conditions of which indeed they are a part. True medicine has always been ready to investigate any means that promises relief from suffering and aid to humanity, and in the pursuit of some of these has been lead into unprofitable fields or even dangerous places, and had to retrace their steps, exactly as have the explorers and developers of our new country.

It is my intention now to consider the period of development of the past twenty-five years, with which many of us are personally familiar. We may consider these also under three different heads:

First—Those due to different economic or political conditions.

Second—Those due to different environmental conditions.

Third—Those due to advances in professional knowledge and practice.

The first heading may be divided into those political changes within the profession itself; and those arising from outside sources but influencing the profession.

Political changes within the profession have brought about a better, and potentially a more effective, type of medical organization. In the early part of this century there was no co-ordination of organizational activities, each unit being a law unto itself, but about that time a movement was launched to consolidate and co-ordinate all branches of medical organizations. This plan was to make the county medical society the unit of organization and to cause all members of county societies to become members of the state society, with membership in the American Medical Association optional. It was finally brought to a successful conclusion about 1905, and has been modified in only minor matters since, the chief modification being that county and state society members are now classed "Members" while those who pay dues to the American Medical Association are called "Fellows".

Theoretically, this plan of organization should have consolidated the interests of the profession and led to a strong and virile body sufficient to solve all problems and to overcome all difficulties which the profession may encounter. Practically, this has not been the case. There still remains a notable lack of interest in medical organization and until this is overcome and uniformity of action is established we will continue to have our many difficulties. A doctor will go to Chamber of Commerce, a civic club, Masonic lodge, Knights of Columbus, bank directors, or most any other class of meetings and happily "chew the rag" till midnight, but let a medical society meeting, representing the business whereby he feeds and clothes himself and family, hold a few minutes late, he gets mighty restless. And upon the least excuse he absents himself wholly. So we see that this factor of change in medical politics has failed to accomplish what it should have for the profession. We feel that this policy of organization is right, that its details are well worked out, and that its failure is due to lack of interest upon the part of the profession itself. A county medical society with an enthusiastic membership which will meet regularly and with a full attendance to consider the various factors of its well-being may solve most local problems that may arise. The society with a casual and uninterested attendance is almost worse than useless, it is misleading to the profession and the people. The scriptural statement: "Where two or three are gathered together, there will I be also," does not apply when there should be twenty or thirty gathered together. The "spirits won't work" in the antagonistic atmosphere caused by the absence of most of the members.

Can a remedy for this unfortunate medical political situation be found? Yes, and it will be found when the profession has been abused enough by repressive laws, free work, and other restrictions and annoyances to awaken. Another factor that will add to interest in the medical organization by the average physician will be greater recognition of the general practitioner by organized bodies. As matters now stand it seems to be the policy of the American Medical Association and many regional and state organizations to ignore this part of the profession as officers, members of committees, boards, and councils, and other positions of importance, with the result that these men feel that such bodies are not working to the betterment of the whole profession and so will not become interested. If you doubt this statement take your Directory and carefully check the personnel of official American medical life. Surely of the hundred thousand or so general practitioners, enough men who are interested and capable, may be found to give this important element of the profession official representation and responsibility. Another action that might well be taken by the American Medical Association would be to employ a field secretary who could spend his time in contact with the rank and file of the profession, not only the "Country Doctor" but all classes of the profession, not only the "Country classes of the profsesion, learning from them of their troubles and problems, and carrying to them the inspiration to do better professional work and to perfect a more effective organization. For until those in authority do give recognition to and put responsibility on, the general man this class will continue uninterested.

In general political activities there has been a marked change in the period under consideration. Early in this time but few states had adequate laws governing the right to practice medicine, now most all have, and the most of these are good. At first the requirements varied all the way from the registration of a diploma from a more or less recognized medical college, or the passing of an examination before a county medical board which had been appointed by a governor or a county official for political purposes, to a careful examination before a competent non-political state board after graduation from a definitely qualified medical college. Now-a-day nearly all the states have fairly uniform laws and requirements with suitable arrangements for reciprocity, and a physician may change his location from one state to another with a minimum of annoyance. This of course, is all to the good; but on the other hand we find that while the regular medical profession has been advancing in its own requirements, and has influenced the various legislatures to require better education and greater ability upon the part of its practitioners, these same legislators have thrown down the bars and legalized the practice of a horde of incompetents, the medical cults if you please, so that the net gain of the healing profession as a whole is less than nothing.

Again, we have the various restrictive laws, which have been passed in the last few years. Many of these laws are undoubtedly right in principle; for instance, I have no quarrel with the Harrison Narcotic Law, I think it a necessary law, but its administration is too often wrong. There seems to be a tendency upon the part of those having charge of its enforcement to throw a burden upon the medical profession. The various changes of regulations covering the handling of narcotics are very annoying and may lead to an unintended violation of law upon the part of an honest physician. The intent of many of these administrators sometimes seems to be to take away from the physician the power to use these necessary drugs when they are actually need to save life, or at least to relieve intense pain. It is my firm conviction that there are but very few physicians who would wilfully violate this law and that access to habituating drugs is almost wholly through "dope-peddlers". The law did one good thing in drawing the attention of the profession to its previous carelessness in handling these powerful medicines, and that attention having been gained, it seems to me that radical and often-changed regulations are an imposition upon an honorable body. The black sheep may be caught and punished without penalizing the reputable physician and his patient.

A restrictive law that must be handled with gloves is the prohibition law. It is a ridiculous situation that a congress, a legislature, or an administrative board may tell you what your patient required in medication, and set a definite limit upon the maximum amount that may be used within a certain time period. But this is the situation. In Nebraska we are not permitted to use any pure alcohol under any circumstances. In such states as do not have local prohibitory laws, one may use one pint of whiskey each ten days for a patient, under the Volstead act. In other words: Should your child swallow a dose of carbolic acid you could not under the Nebraska law obtain and use the best antidote, pure alcohol; should it be your judgment that whiskey or brandy was necessary, even life-saving, in a case of diphtheria, typhoid fever, pneumonia, diabetes, or any other disease, the state law steps in and says, let the patient suffer or even die. And the Volstead Act says, give him a pint every ten days. Ridiculous and shameful on its face, but the law is made for the medical profession by bigots and radicals and the profession in a most cowardly manner submits or, along with most every one else, evades or violates it, thus bringing into contempt all law. The same observations of administration apply to the prohibition laws that apply to the Harrison Act, in regard to those whose duty it is to enforce it.

It is interesting to note the reaction of an individual prohibitionist to the law when a member of his, or usually her, own family is the sufferer. A short time ago I had under my care a very old man who was dying of senile pneumonia, and you are well aware of the distress which is evident, and also if you have observed well, that this distress is relieved by alcohol more than by any other drug. I gave this information to the family, all of whom were very active prohibitionists and intense critics of the use of alcohol under any circumstances, was immediately urged to get the whiskey by fair means or foul, law or no law, and my refusal has almost lead to a breach in our long-lasting friendship. But in some manner they obtained the whiskey, legally or otherwise, dosed the old gentleman liberally with it and he passed peacefully to the farther world. The law was entitled to no consideration when the peace of father was concerned. But suppose it had been some other person's father, say your father or mine. "The law is the law and must be obeyed." No doubt every member of this society could recount a similar instance.

Another pernicious law is the Sheppard-Towner act, which is wrong in both principle and application. It is wrong in principle because it takes away from the states and individuals the management of their own sanitary affairs; supplies an army of tax-eaters to pry into private matters; and extends governmental interference to an unexcusable extent. It is high time that the country heed the warning recently uttered by President Coolidge and return to a basis ot local government and individual responsibility. This law is wrong in application because carefully gathered data proves that it has not accomplished the object desired. It is thus seen to be expensive, un-American, ill-advised, and inefficient, any one or all of which should cause its discontinuance. The laws governing the collection of vital statistics, which have spread widely in the period under consideration, are well advised, useful, efficient, and are a net gain to both the profession and the laity.

Medical education in 1900 was in a chaotic condition; medical schools had sprung up all over the country under various auspices and without control and many of them were of poor quality and without equipment. In the last few years of the last century it was recognized by educators, both medical and lay, that this was an unsatisfactory condition and steps were taken to correct it, but not much was accomplished till a campaign of education of both the profession and the laity was carried on for a number of years. A careful investigation and full report on conditions, which was bitterly criticised and those carrying it on roundly abused, had the effect of causing the consolidation of many small schools, the closing of others, and the placing of medical education under proper control and guidance. Medical colleges today are inspected and graded by representatives of the profession at frequent intervals and but few are left that do not give good training. It is an insurmountable disgrace for any reputable medical man to be connected with a low grade school. Students are required to have a better general education, the instruction in medical lines is more thorough, hospital training is required, or at least advised; with the result that our present day graduates have a better grounding in general medicine and the late tendency to over-specialization is somewhat overcome.

Postgraduate teaching is not yet on a wholly satisfactory basis, but many of its faults have been removed and rapid strides toward a satisfactory solution of its problems are being made. On the whole medical education is on a very satisfactory basis, regardless of what its critics may say. The worst that may be said against it is the tendency in some places to attempt research by undergraduates. This is improper, as these students have enough to do to learn what others have accomplished through research, and true research must rest upon a foundation of thorough training, actual experience, and careful observation. Another change that must be made in medical education is that the work of the general practitioner must be more stressed and students trained so that the general practitioner of the future may do most of the work of treating the sick. A well trained general man should be competent to correctly diagnose and scientifically treat at least ninety per cent of human ailments. This is not intended to mean that every graduate physician should attempt to care for all classes of patients, but it does mean that he should have the ABILITY to do so. As he grows in age and experience it will be but natural that he develop a greater liking for certain lines of work or more skill in handling them; and to a greater or less extent a distaste for other types; and that out of this combination of like and dislike, should grow a greater or lesser degree of specialization. This, in reality, is the manner in which a physician should determine his specialty, should he desire to abandon general practice; and having determined upon special work he may lay the best foundation while in general practice, building upon this the necessary additional special training. Research workers and full time hospital men will always have their place in the scheme of medical education and medical practice, but greater prominence and more important positions must be given to those who can teach the student proper methods of handling his private work and his relationship to the public, the profession, and the state, and every medical school should have such a man on its teaching staff.

As the object of medicine is to relieve suffering and cure the sick the general practitioner should be a real research man, and he will be if he is a hard student and a close observer. Fine buildings and great laboratory equipment do not make the investigator; his real tool is his brain and the other things are but accessories.

The general practitioner is the natural and normal member of the profession to come into closest contact with the public and every effort should be expended to make him representative of its highest attainments. Specialism came about mostly because of the revolutionary developments and radical advances of the period from 1880 to 1920, but these have been, or readily may be, absorbed by the profession as a whole, leaving to specialists those fields as yet not thoroughly explored and developed, and those fields in which long and intensive special training is necessary. The specialist should develop from general practice because of personality, temperament, and desire, and ability.

The second division to be considered is that of environmental change. The development of automobiles, good roads and community hospitals has revolutionized the practice of medicine. In the early years transportation was exactly as it had been since the very dawn of civilization; dependence was wholly upon horses, roads were mere trails from one settlement to another; and the sick were invariably treated in their homes. The development of the automobile brought in its train the building of good roads, and doctors were among the first to take advantage of the use of cars. Some of us can tell weird stories of fighting almost impassable roads with the early types of automobiles.

The effects of this evolution are widespread; the most outstanding being the desertion of small towns by their physicians. At one time practically every cross-road had its doctor and his range was limited by the travelling power of his horse, a radius of probably ten miles at most. Today the range of the doctor is almost unlimited, it is as easy for us to make a trip of fifty, seventy-five, or even one hundred miles, as it was for the old-timer to go to the extreme end of his limited range. And today, if we have a difficult medical case to handle, or a surgical case to care for, we seldom consider attempting to transform the home into a hospital, but we either bring the patient into the hospital as we come home or have an ambulance do so for us. There, thus comes about that there is but little demand for the medical men in the small village, and all claims to the contrary, thsi has not worked a hardship upon the isolated communities, but has helped them, for in reality they are getting better service today than ever before. I have yet to learn of any person suffering from want of medical care in our outlying ranch country where an effort was made to obtain medical service. True the cost to the individual may be more, but I doubt if the cost to the community is as much; certainly it is not when we consider the lessened time of the incapacitation of the patient, and the saving of life, due to the better service rendered. The poorer class of doctor in these villages was forced to quit business and the better class to move to the larger towns nearby. We find the tendency to hospitalization of all classes of patients growing rapidly, even the greater part of the obstetrical work of some of us is now being done in the hospital, and in my opinion it will not be long until all classes of bed patients will seldom have medical attendance at home.

Another environmental change is that of increased information of the public on health topics. This has come about from many sources; many daily papers run a health column which is more or less reliable; magazines are full of health topics, some of which are foolish, but some quite truthful; Hygeia and other publications of organized medicine are widely read; even the administrators of the Sheppard-Towner Law and other government functionaries have made some effort to inform the public; so that in one way and another, a great many of the people have information that was not available a few years ago. In some ways this dissemination of medical information has made the practice of medicine more pleasant, and it has certainly increased the responsibility of the practitioner. The average person can now discuss asepsis, sterilization, disease prevention, routine examinations, vaccinations, healthy food and water supplies, and like topics, with a degree of intelligence, and can and and will follow instructions quite well.

In this connection medical organizations should carry on a compaign of publicity and advertising. This work should be distributed, the American Medical Association carrying on in the large national newspapers and magazines, the State societies in the larger state newspapers and the County societies in local papers, and in this manner all needs will be met. In all cases this advertising should bear the name of organizations, never under any circumstances, that of individuals. In this manner the objections to personal advertising is avoided and the statements made have the stamp of authenticity. Also, such subjects as are suitable may be properly handled, for example local societies could deal with prevalent epidemics of preventable diseases; State societies with statewide conditions, as malaria control, food and water supplies and like topics; while the national organization might well consider the general advances of modern medicine. This distribution is, of course, tentative and general, and the three divisions will of necessity overlap at times. This plan is susceptible of much elaboration and variation, but something along this line is an immediate and pressing necessity. The present method of depending upon the good will and voluntary aid of publishers is of great value so far as it goes, but a systematic and intensive campaign cannot be carried on in such a manner.

Inspection of food and water supplies and the thorough application of known dietary and other prophylactic measures has almost completely eliminated typhoid fever, dysentery, and other intestinal infections from many communities. In like manner of fighting the known cause, yellow fever has been driven from the United States and malaria from many communities. The elimination of such infections has had its effect upon the practice of nearly all doctors, causing an almost complete change in methods, because of change in conditions to be met.

Another great factor in change of conditions is the rise of nurses training schools and the activities of the registered nurse. Only a few years ago even the best of hospitals did not have training school service, and proper help in the sick room was not obtainable. The old woman who was the community nurse was familiar to us all, we met her at the bedside of the typhoid, the pneumonia, the parturient, in fact everywhere that sickness and suffering entered; and be it said to her credit that she performed her duties well and faithfully and in every way tried to relieve suffering and stay the hand of death, obeying orders and loyal to the doctor and the patient, all without hope of monetary reward and only too often without thanks. Some of my most delightful memories gather about several of these good women who stood by my side in the hard fights of my early practice and by their patience, their loyalty, their friendship, and their resourcefulness aided in our fights for life. Untrained they were, sometimes uncouth, but seldom unintelligent, and always willing to learn and to do. Such lives would be fit subject for the pen of some great writer. They are now passed and gone and their place taken by the efficient and well trained young lady, also faithful, loyal, and true, always ready to stand with us in our unceasing fight for the relief of suffering and the saving of life; more competent sometimes in the detail of case management than are we ourselves. The help of these young women is indispensable to our modern medical practice. There is but one criticism I would suggest; is it not possible that the tendency is to make doctors, rather than nurses, of them? It seems to me that the training course might well be shortened that those who wish to enter private nursing and routine institutional work might not be out such a large outlay of time; while those who wish to specialize as hospital executives, laboratory technicians, anaesthetists, etc., might take special post-graduate training in the desired lines.

A consideration of the routine of the daily practice of a busy and up-to-date doctor will show but little similarity to that of twenty years ago. The advances in diagnostic and therapeutic technic are not less than revolutionary. As against the simple urinalysis which comprised the whole of laboratory examination of that period we have the more complete urinalysis, kidney function tests, blood chemistry, blood counts, the various serological tests, tissue examinations, and many other laboratory procedures, any or all of which we apply to such cases as require them.

The x-ray has opened a field of diagnosis and treatment undreamed of in that day, for though it was discovered in 1897, its most hopeful protagonist merely surmised that it might be "helpful in some cases of fractures and foreign bodies".

Almost the whole field of intravenous therapy, vaccine treatment, foreign protein therapy, antitoxins, blood transfusions, chemotherapy, insulin and other methods of endocrine therapy, spinal puncture, modern surgery, the cystoscope and other electric lighted instruments, and many other procedures have been added to our therapeutic resources in this period. It is a far step indeed from the wholly oral administration of doubtfully efficient medication of the early part of this century to the definite results we expect today from the parenteral use of many specific substances. While diphtheria antitoxin, as an instance, was in use in the beginning of this time, it was not well distributed and suitable dosage for the various stages of the disease had not been worked out; it was used wholly subcutaneously, and the intramuscular, intravenous, or intra-abdominal methods were unknown. Some of the other procedures mentioned were known, or even well advanced in the experimental stage, but were not in general use as they are today. The hypodermic administration of medicine was almost wholly limited to the use of opium derivatives for the relief of pain. Compare this situation with our daily use of the hypodermic needle in its many ways.

The doctor of the past was almost wholly concerned with the cure of disease, giving but little attention to preventive medicine. This is readily understood when it is remembered that all of prophylactic medicine has developed within the past fifty years and much within the past twenty-five. Intelligent prevention could not be developed until the cause was known and the causes of many preventable diseases was not known to the profession even early in this century; and even where known, definite preventive measures had not yet been developed. Another example from diphtheria, in which disease the causative organism was discovered in the early eighties, the curative procedure in the middle nineties, but not till the past few years have we known a definite, active, immunizing method. The older physician did have an excellent empiric knowledge of medicine, he knew the beneficial agents in many cases of disease; for example malaria, the fact that he did not know of the Plasmodium and its relationship to mosquito infestation did not prevent him from knowing that quinine would cure the disease, and the same may be said for many other conditions.

And what of the doctor of the future? Is he to be succeeded by the hired man of the government? Is the State to take over control of the practice of medicine? Is his field to be so hampered by the development of simple curative methods and sanitary procedures as to offer no incentive for further development? I think not. It is my opinion that the profession will adapt itself to the changed conditions and will become more useful than ever in its history. The State will take over the management of epidemics, prevent their introduction from foreign lands and their domestic spread; will supply charitable, correctional, and educational institutions for the care of the criminal, the feeble minded, the insane, the destitute, and others who cannot be cared for in private institutions and the home; will provide laboratory facilities for the diagnosis and study of certain epidemic diseases, the examination of public water, dairy, and food supplies, and the solution of certain medico-legal problems; and will probably perform certain other duties directly concerned with public welfare. On the other hand there is now a definite tendency to remove governmental interference from private affairs, abandon sumptuary and restrictive legislation, and to leave individuals to attend to their own affairs. This statement is made with full knowledge of present attempts at "anti-evolution" laws and other misguided legislation, as we believe such movements to be ephemeral, not in keeping with American ideals, and sure to pass quickly. They are the result of fanaticism and mis-information, an un-American attempt to unite Church and State and certainly they cannot prevail against an intelligent, well informed, public opinion. They appear to be the last effort of those who believe that everything may be accomplished by "pass a law against", and the crest of this wave seems to have passed. Surely the people of the United States will not submit to having another law to be evaded or violated, as would be necessary to obtain a knowledge of biology under such restriction.

The proper line of advance for the physician of the future will be to follow out the present normal line of professional development. He will become the family advisor in all matters of health, will conduct regular examinations of all members of the family in an effort to forestall disease, will administer the necessary prophylactic measures, and when sickness does befall will intelligently treat the patient. His contacts with his clientele will be personal and there will be no point of conflict between his activities and those of the government. The physician of the future will be a broader man in every way than his predecessor, will have a better general and more thorough medical education and will be qualified to treat or advise in all types of disease. Specialism will be upon a higher plane and the cases referred will require a really well trained man. Specialists will secure their patients by the recommendation of the family physician who will be guided in the selection by the requirements of the particular case, and the drifting of patient from one doctor to another and from one specialist to another will stop.

Yes, these things will come to pass — if the physicians of today take advantage of their opportunities, if there be a directed evolution of the profession along these desirable lines. Should the profession continue to drift along, unmindful of its own good, there will be further invasion of its rights by the state and by commercial concerns who make money by subsidizing an occasional doctor, the profession will lose in prestige and drop back to a condition which it left at the end of feudalism, a mere hired vassal.

Let the profession awaken, let us not attempt to go backward but to progress; we cannot turn back the hands of the clock; but we can advance with the times. Many of the leaders of professional thought have for years been aware of the problems of the profession, but have been unable to awaken the rank and file. Each county society and each doctor should become active in the study of all phases of this transitional period and help to direct the destiny of the profession. Each individual should attend all meetings of the profession he possibly can and take part in their work; read and study the literature of the profession, paying due attention to the editorials and articles upon economic conditions and organizational affairs and history of the profession, as well as reading the purely professional matter. *The Nebraska State Medical Journal,* the *Journal of the American Medical Association,* the *Bulletin of the American Medical Association* and many other publications have published a large and valuable literature upon these subjects. The various officers, councils, and committees have given deep thought and careful investigation to these matters and have published their findings. Are we as familiar with these as we should be? Have we given thought to these questions that affect our very professional lives?

Have we co-operated with these men in their efforts to assist us? In short, have we done our duty by ourselves, our patients, our communities, and our successors, in rendering assistance to those who are attempting to raise the standing of our profession as a whole? If so, well and good, let us be proud of ourselves; if not, let us start the New Year with a careful introspection and the determination that the future will find us more thorough in our study of conditions and more active in the fight for right. Let us do our part to put our profession upon the high plane it held some fifty years ago, and to put it there by making it worthy of respect in every way.

TUBERCULOUS PERITONITIS*

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Although tuberculous peritonitis is not a common disease in this section of the country, it occurs with sufficient frequency to justify a review of symptoms and treatment. I shall not consider, in this paper, those cases which occur secondary to a tuberculous enteritis and colitis, nor those cases which have a demonstrable tuberculous focus elsewhere in the body. However, in this latter group the symptomatology and abdominal signs are the same as in the groups to be considered.

The primary foci of tuberculous peritonitis are the Fallopian tubes, the ilio-cecal region, the mesenteric and retro-peritoneal lymph glands. Frequently the primary focus may be judged by the localizing symptoms provided the patient is seen early, which is exceptional. As a rule when the patient comes for diagnosis, the condition involves the entire abdominal cavity.

Tuberculous peritonitis, as tuberculous conditions elsewhere in the body, occurs with different degrees of virulence and in patients with different degrees of resistance. There are recognized three distinct pathological groups, namely: The ascitic which is the most favorable from a prognostic viewpoint; second, the adhesive group which is of graver importance, and thirdly, the ulcerative type which is by far the most serious and difficult form to carry through to a successful termination. These groups are frequently associated which fact complicates the disease from a therapeutic point of view.

This condition occurs most frequently in early adult life especially in the second and third decades, though it is frequently seen in children and occasionally in later life. It is no respecter of sex; autopsy statistics show a predominence in the male while surgical statistics show a predominence in the female.

From a clinical viewpoint tuberculous peritonitis occurs in two forms, namely: The acute and the sub-acute or chronic. The acute type is the more difficult form in which to make an early diagnosis. The symptoms at onset may be predominently abdominal or they may represent the systemic evidence of acute pyogenic infection. The outstanding symptoms and signs are abdominal pain and distention, vomiting associated with a continuous fever as high as 105 degrees and a rapid pulse. This type closely resembles acute perforative peritonitis from which it is differentiated by less muscle spasm and less abdominal tenderness. Moreover the pulse does not show the continuous increase characteristics of a septic peritonitis. The blood pressure in tuberculosis is usually low. The blood picture as a rule shows leukopenia. When a leukocytosis is present, a differential count will show a marked increase in the small mononuclears which is an important diagnostic factor.

The acute form which starts with a chill, fever and headache accompanied by more or less abdominal distention and colicky pain and especially if associated with a roseola exanthema and swelling of the spleen must be differentiated from typhoid fever. This type however, is very rare. The early appearance of ascitic fluid in tuberculosis is very characteristic of the disease, also the early appearance of bladder symptoms.

The type of tuberculous peritonitis most frequently seen is the sub-acute or chronic. This form has an insidious onset. As a rule the first symptoms noted are those of a gastro-intestinal disturbance. Irregular mild attacks of colic associated with abdominal distention and soreness, and constipation or diarrhea. Irritability of the bladder is frequently present. The patient feels tired and weak and if the primary focus is in tubes, menstruation will be associated with pain which was not present prior to the present illness. Sacral pain and leucorrhea are not uncommon. As the condition develops the patient becomes anaemic and loses weight and strength. The pulse becomes rapid and the blood pressure falls. An evening rise of temperature occurs which is always suggestive of tuberculosis. The patient may develop persistent spots of localized tenderness and spasm. In this type also, the blood picture plus the presence of fluid in the abdomen aids in establishing the diagnosis. In my cases I have always succeeded in getting a positive Moro tuberculin reaction.

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The presence of adhesions, which simply means that the tissues are reacting and are capable of repair, may be diagnosed by the uneven contour of the abdomen, localized tender masses and increase in abdominal pain when the patient changes position of the body. All abdominal organs are subject to disturbed function from tuberculous peritonitis and may become tuberculous as a result of the peritoneal involvement. The ascitic fluids varies in quantity and character. There may be a few ounces or several gallons in the abdomen. "The formation of abundant exudate of a low specific gravity indicates that the reactive power of the tissue from which the exudate comes is very low or that they have not been stimulated" (loc. cit.) When ascites develops suddenly in children it is usually due to tuberculous peritonitis. In the acute cases it is usually bloody, in the subacute and chronic it is serous in character. When a purulent exudate develops it is usually encapsulated and may rupture into the intestinal tract or through the abdominal wall. In children this rupture occurs in the region of the umbilicus. In the female the chronic type must be differentiated from a papillary cystadenoma of the ovary which produces marked ascites. Here, however, there is more marked cachexia and the blood picture aids in the differential diagnosis.

In the consideration of the treatment of this condition I shall purposely avoid the many different treatments which have been advocated, such as x-ray, the injection of oxygen into the abdomen, and the numerous drugs which have been heralded as specific for tuberculosis and confine myself to the therapy which has proven satisfactory in my own experience. In the acute type and the active phases of the chronic form the treatment is similar to that of tuberculosis elsewhere in the body, namely: physiological rest, abundance of fresh air and good wholesome food with possibly a little tonic, when necessary to stimulate the appetite. One of the best special forms of treatment is exposure, in the nude, of the patient to the rays of the sun for one or two hours per day. This can be handled very nicely in the home.

Tuberculin when judiciously used, has a distinct advantage, in my opinion, in the treatment of these cases. I have used it as a routine and feel that it is an important adjunct to our armamentarium. Surgical procedure should not be considered until cessation of the acute manifectations. This usually takes from three to four months. When the condition becomes surgical the most important factor is surgical judgment. It is a proven fact that opening the abdomen has a distinct effect upon this condition, due probably to exposure to light and air, a change in the intra-abdominal pressure and light manipulations of the intestinal coils which produces a hyperaemia which is beneficial in all types of tuberculosis.

The danger of this primary operation is the tendency to do too much. The adhesions should not be disturbed nor any effort made to remove the suspected foci unless it can be done with a minimum amount of trauma and without danger of opening new avenues for the infection to extend to other parts of the body. Frequently at the initial operation the ilio-cecal region and Fallopian tubes will found to be invisable and matted in adhesions and omentum. They should not be disturbed. The ascitic fluid should be removed by suction or light sponging which does not traumatize the tissues, after which the abdomen is closed without drainage. With any form of drainage there is danger of secondary infection which adds a serious complication.

It is remarkable the rapid progress the patient usually makes after this simple surgical procedure. After the lapse of from three to six months the patient returns for a second operation, the purpose of which is to remove the suspected foci of infection, namely: The Fallopian tubes and the appendix. One is struck by the remarkable change which has taken place in the abdomen. The tubercles which formerly studded the entire abdomen and even seen in the retro-peritoneal space before opening the abdominal cavity, as in one of my cases, have disappeared so that it may be necessary to search before finding them. The adhesions which were abundant have disappeared and the tubes and appendix which could not be seen at the former operation are easily accessible. A few scattered tubercles may be seen over the uterus and adnexia and over the cecum.

In the removal of these foci care should be taken not to traumatize the surrounding tissue and the smallest amount of absorbable suture material should be used, which is consistent with surgical safety.

At the completion of the treatment the patient should be advised to spend at least one year under medical supervision before returning to his usual avocation. The handling of the obliterative adhesive and the ulcerative types of tuberculous peritonitis is a different problem and time does not permit of its consideration.

In conclusion I will say that tuberculosis is a treacherous disease which tests the ingenuity of the physician and that there is no specific cure known at the present time.

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MODERN ASPECTS OF NUTRITION: THE PATHOLOGY OF MALNUTRITION

21. The Relation of Faulty Nutrition to Heart Disease.

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INTRODUCTION

We have just passed a little more than the first quarter of the twentieth century. During this quarter much has been done in the direction of health. We have lengthened the span of life. As the table below shows, we have reduced to a very remarkable extent the death rate from typhoid and paratyphoid fever, from malaria, smallpox, scarlet fever, diphtheria and all forms of tuberculosis. In short, we have measurably increased our knowledge with reference to control of infections.

DEATH RATE FROM CERTAIN SPECIFIC CAUSES PER 100,000 POPULATION IN REGISTRATION AREA*

	1900	1923
Typhoid fever and paratyphoid fever	35.9	6.8
Malaria	7.9	2.8
Smallpox	1.9	0.1
Scarlet fever	10.2	3.5
Diphtheria	43.3	12.1
Tuberculosis of the respiratory system	181.8	83.5
Other forms of tuberculosis	20.1	10.0
Diarrhea and enteritis	133.2	39.9
CANCER and OTHER MALIGNANT TUMORS	63.0	89.4
DIABETES MELLITUS	9.7	17.9
CEREBRAL HEMORRHAGE and SOFTENING	75.5	92.2
ACUTE and CHRONIC NEPHRITIS	89.0	90.1
DISEASES OF THE HEART	132.1	175.3

At the same time we cannot help notice that the death rate from cancer and other malignant tumors, from diabetes mellitus, from nephritis, from cerebral hemorrhage and softening, and from heart disease, has increased to a very alarming extent. These diseases we may conveniently call diseases involving derangement of function or metabolic diseases, even though in many cases infection may be a predisposing factor. The insurance experts call them "the degenerative diseases." The decrease in deaths due to primary infections and the increase in deaths due to disturbances of metabolism indicate the logical road preventive medicine must follow in the future.

A study of diagnoses reported by general practitioners also indicates that the group of diseases that are on the increase stand very high in the order of frequency with reference to office visits, home visits, and hospital visits. The term general medical diseases used in the tables include nephritis, diabetes, obesity, hypertension, heart disease, anemia, arteriosclerosis, asthma, endocrine disturbances, Hodgkin's disease, and pellagra.

DIAGNOSES REPORTED BY GENERAL PRACTITIONERS*

A. OFFICE VISITS.

	Per Cent
Minor surgery	20.6
Upper respiratory infections	15.1
GENERAL MEDICAL DISEASES	14.3
Gastro-intestinal disorders	5.3
Venereal diseases	6.3
Throat infections	4.1
Vaccinations, inoculations	3.6
Physical examinations (95% for life insurance)	3.4
Gynecology	3.3
Skin diseases	3.2
Urogenital disease (including pyelitis)	3.0
Obstetrics	2.4
Nervous disorders	2.4
Syphilis	2.3
Eye conditions	2.3
Infant feeding	1.6
Tuberculosis	1.6
Contagious diseases	1.5
Ear infections	1.3
Nose and sinus infections	1.3
Major surgical operations	1.1
	100.0

B. HOME VISITS.

	Per Cent
Upper respiratory infections	32.0
GENERAL MEDICAL DISEASES	14.5
Pneumonia	9.1
Obstetrics	7.9
Minor surgery	7.5
Contagious diseases	6.8
Throat infections	3.9
Gastro-intestinal disorders	3.7
Surgical diagnosis (major conditions)	2.5
Tuberculosis	2.3
Ear infections	1.7
Gynecology	1.5

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*United States Mortality Statistics, 1923.

*Preliminary Report of Commission on Medical Education, January, 1927, p. 63-65.

Urogenital diseases	1.5
Nervous disorders	1.5
Infant feeding	1.1
Skin diseases	0.7
Nose and sinus infections	0.5
Venereal diseases	0.4
Physical examinations (life insurance)	0.3
Vaccinations	0.3
Syphilis	0.2
Eye conditions	0.1
	100.0

C. HOSPITAL VISITS.

Surgery		55%
Abdominal	18	
Traumatic	8	
Pelvic	7	
Anaesthesia	6	
Extremities (neck)	5	
Throat	5	
Ear	3	
Urogenital	3	
Medicine		30%
GENERAL DISEASES	17	
Respiratory	8	
Gastro-intestinal	2	
Contagious	2	
Urogenital	1	
Obstetrics		15%
		100%

The Council on Medical Education and Hospitals, of the American Medical Association, has also constructed a table based upon an analysis of 5,386,994 out-patient visits in clinics situated in Los Angeles, San Francisco, Chicago, New Orleans, Baltimore, Boston, Detroit, Minneapolis, St. Louis, Newark, Cincinnati, Cleveland, Pittsburgh and New York. In this table, which is given below, the diseases classed under general medicine, almost top the list.

ANALYSIS OF OUT-PATIENT VISITS BY CLINICS*

	Per Cent
General surgery	15
GENERAL MEDICINE	14
Eye	12
Ear, Nose, Throat	10
Skin	7
Pediatrics	6
Genito-urinary	6
Orthopedics	6
Venereal	5
Gynecology	4
Dentistry	3
Nerve	3
Obstetrics	3
Tuberculosis	2
Others	4
	100

Let us now turn our complete attention to heart disease. A table giving the causes of 1,193,017 deaths in the registration area of the United States for 1923 awards heart disease the first place on the list. The largest number of deaths among physicians in 1925 and 1926 was also caused by heart disease.

DEATHS IN 1923*

	Per Cent
DISEASES OF THE HEART	14.3
Pneumonia, influenza and other diseases of the respiratory tract (exclusive of tuberculosis)	14.1
Tuberculosis	7.6
Cerebral hemorrhage and softening	7.4
Malignant growths	7.4
Nephritis	7.3
Violent deaths (exclusive of suicide)	6.9
Congenital debility and malformations	5.9
Diarrhea and enteritis	3.2
Puerperal septicemia, accidents of pregnancy, diseases of the female genital organs	1.7
Typhoid, malaria, scarlet fever, meningitis	1.4
Appendicitis and typhlitis	1.2
Senility	1.1
Diphtheria	1.0
Epidemic and endemic diseases (other than given elsewhere)	1.0
Diseases of the stomach (exclusive of malignancy)	1.0
Measles	1.0
Whooping cough	1.0
Hernia, intestinal obstruction	1.0
Suicide	1.0
Unknown or ill-defined disease	1.4
Other diseases	12.2
	100.0

From time to time in the history of mankind, some one disease or another has been looked upon as the human scourge. At one time it was smallpox; at another time it was tuberculosis. Today it is heart disease. This disease, indeed, has of late years assumed the rank of one of the most vital medical, sociological, and economic problems of civilized races.

Heart disease in this country causes more deaths than tuberculosis or cancer(1). It causes one-eighth of the deaths of all ages, and one-fifth of the deaths in persons over 40 years of age. Two million persons in the United States suffer from heart disease. Two per cent of all persons examined by insurance companies are rejected for heart disease. Two per cent of all industrial workers have heart disease. One and a half per cent, or a quarter of a million out of twenty-two million school children, are handicapped physically and mentally by cardiac disturbances. In the school population of New York City alone we have twenty thousand cardiacs.

It is interesting to note that 10 per cent of the bed capacity of our hospitals is devoted to the care of cardiac patients. This figure is merely an average; some hospitals run much higher. Peter Bent Brigham Hospital, for instance, draws 15 per cent of its admissions from patients with heart disease, while the New York institutions, Bellevue Hospital and Presbyterian

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*Preliminary Report of Commission on Medical Education, January, 1927, p. 67.

*United States Mortality Statistics, 1923.

Hospital, obtain 20 per cent of their patients from the ranks of the ever increasing army of cardiacs.

The figures of the United States War Department, compiled in 1920, show that 5.7 per cent of the men in the army during the World War suffered from valvular diseases of the heart.

DEFECTS FOUND IN DRAFTED MEN, UNITED STATES ARMY*

		Per Cent
Defects of organs of locomotion and deformities		32.1
Flat foot	19.6	
Deformities and loss of extremities, malunion of fractures, ankylosis of joints, etc.	12.5	
Hernia and enlargement of inguinal rings		7.1
Defective vision		6.1
Venereal diseases		5.8
VALVULAR DISEASES OF THE HEART		5.7
Tuberculosis, including suspected pulmonary		5.3
Underweight		4.8
Hypertrophy of tonsils		4.1
DISEASES OF CIRCULATORY SYSTEM (other than valvular disease of heart)		4.1
Congenital malformations and defective physical development		3.8
General diseases, goiter, obesity, blood diseases, diabetes, drug addiction, etc.		3.6
Diseases of the nervous system (other than mental deficiency)		3.6
Mental deficiency		2.6
Diseases of the ear		2.6
Diseases of the eye (other than defective vision)		2.5
Defective and deficient teeth		2.4
Non-tuberculous diseases of the respiratory system		1.0
Non-venereal diseases of genito-urinary system		1.0
Skin diseases		1.0
Miscellaneous diseases (not given elsewhere—infections, throat and nose, digestive system)		0.8
		100.0

Of the number of drafted men rejected for service, 13.3 per cent were rejected for diseases of the heart. The only pathological condition that out-ranked it in frequency related to the organs of locomotion, which constituted a rejection group of 18.6 per cent. Flat-feet made up 3.2 per cent of rejections, while the other 15.4 per cent came from deformities and loss of extremities, malunion of fractures, ankylosis of joints and other defects. Two hundred thousand men alone were disqualified because of heart conditions.

DISTRIBUTION OF CAUSES FOR REJECTION OF DRAFTED MEN, UNITED STATES ARMY*

		Per Cent
Defects of organs of locomotion and deformities		18.6
Flat feet	3.2	
Deformities and loss of extremities, malunion of fractures, ankylosis of joints, etc.	15.4	
DISEASES OF THE HEART (chiefly valvular)		13.3
Tuberculosis		9.3
Defective vision		8.7
Underweight		7.6
Diseases of the nervous system (other than mental deficiency)		6.1
Congenital malformations and defective physical development		5.1
Mental deficiency		4.5
Diseases of the ear		4.5
Hernia and enlargement of inguinal rings		4.3
Diseases of the eye (other than defective vision)		3.9
General diseases, goiter, obesity, blood diseases, diabetes, drug addiction, etc.		3.3
Defective and deficient teeth		3.1
Diseases of circulatory system (other than the heart)		1.8
Venereal diseases		1.4
Non-tuberculous diseases of respiratory system		1.2
Non-venereal diseases of genito-urinary system		1.0
Skin diseases		1.0
Miscellaneous diseases (not given elswhere—infections, throat and nose, digestive system)		1.3
		100.0

THE CAUSATIVE FACTORS IN HEART DISEASE

The causes of heart disease has been thus far almost wholly laid to infection. Emerson(2), in his Shattuck Lecture, discussed 927 adult cases. He divided the number of cases among the following causative factors:

Acute rheumatic fever	331
Acute bronchitis	207
Syphilis	122
Scarlet fever	78
Diphtheria	47
Pertussis	14
Measles	54
Carious teeth	163
Chorea	7

In 720 cases in children Lambert(3) placed the etiology as follows:

Acute rheumatic fever	279
Acute tonsillitis or sore throat	282
Syphilis	0
Scarlet fever	53
Diphtheria	63
Pertussis (at one clinic only)	130
Measles	232
Carious teeth (none at one clinic)	202
Chorea	49

It is not at all reasonable to believe that heart disease is caused altogether by infection, *although we cannot negate the fact that infection plays a very important part.* Infection cannot be the sole causative factor. If that were the case we should expect the mortality rate for heart disease to pursue the downward trend which characterizes the mortality rate for such infections as typhoid, tuberculosis, or diphtheria. This expected decline in mortality does not seem to take place even though the removal of foci of infection continues on a nation-wide scale. Infection in heart disease may sometimes be merely an intercurrent phenomenon. We often find co-existing infection in scurvy, in infantile tetany, and in rickets. But we do not at present consider for one moment that the infection is the cause of the disease.

In spite of the advancing rate of mortality Haven Emerson(4) claims—and justly so—that it is within the realm of possibility, within reach of present day medical and social knowledge and resources, to make as much reduction in sickness and premature death from heart disease as has been obtained by teaching and by organized medical service in the control of tuberculosis. He stoutly maintains that we should not await the coming of patients into our office, but that we should search for them among the presumably healthy and prevent disabilities or attack any present before they materially damage the individual. This regime of prevention is only possible when the doctor on one hand and the layman on the other develop the attitude of mind fructifying into the habit of requiring or seeking a medical examination once a year for adults, twice a year for children under fourteen, and always after apparent recovery from any acute febrile disease.

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*Defects Found in Drafted Men, United States War Department, 1920.

All are agreed that in heart disease prevention is the best cure. But before prevention can be adequately carried out there must be better and more certain knowledge of etiology. We have mentioned infection as an accomplice aiding in the depletion of cardiac reserve. Another factor somewhat under emphasized lies in the ways of modern life with its pace that kills.

To show that a strenuous life leads to greater mortality we cite the fact that women, who as a rule lead a less hectic life, have a smaller death rate than men. In 1915, this country lost through death 234,871 males and 201,722 females; in 1925, 555,267 males and 475,251 females. People in the rural districts live a quieter life. The death rate from heart disease in rural communities should be decidedly less than in cities. That this is so is seen from the table following:

DEATH RATE FROM DISEASES OF THE HEART PER 100,000 ESTIMATED POPULATION*

	1923	1922	1921	1920	1919	1918	1917	1916	1915	1914
Total Registration Area............	175.6	165.7	157.1	159.3	146.7	170.1	171.7	168.7	165.7	159.7
Registration States	176.1	166.3	157.3	159.7	147.1	170.5	171.3	168.7	165.	159.4
Cities in Registration States.......	201.0	189.2	174.3	177.9	168.4	195.6	191.3	187.4	176.6	171.9
Rural Part of Registration States..	153.3	145.3	141.1	142.5	128.5	147.8	153.6	151.6	153.5	147.1

Incidently this table shows the upward trend of the death rate from diseases of the heart for the ten years, 1914 to 1923, inclusive.

And still another factor, hardly ever mentioned, but nevertheless very instrumental in the gradual but progressive deterioration of the myocardium with loss in physiological reserve and functional power, is malnutrition. In many people—all three causes—infection, excessive demands on the heart due to over-activity, and malnutrition—operate simultaneously to break down the anatomic and physiologic integrity of the heart.

It is the aim of this paper to show that malnutrition brings about atrophy or great loss of weight of the heart or hypertrophy with increase of weight, that this atrophy or hypertrophy is not a simple but a grave pathological process accompanied by profound degenerative changes in the cardiac muscle. These reactions of degeneration bring about weakening of the muscular walls, diminution in natural tonus, loss of motive power, and of reserve force. This state of affairs is by no means without any deleterious influence on the respiratory system, on the circulatory system, on pulse rate and blood-pressure. Osler and McCrae(5) state that the reserve power with which the cardiac muscle is endowed disappears in heart failure. It is greatest in youth, and is increased by adequate nutrition. It is lessened by degenerative changes in the cardiac structure, gross or minute, by bacterial toxins and other poisons, by defective nutrition. *We must remember that regardless of the name of the disease or the site of the lesion that in the last analysis all cardiac failure is muscular.*

In a previous paper we touched upon the intriguingly close relation between food and body vigor. The characteristic weakness that goes with total inanition, with underfeeding and with the various nutritional diseases is due in part at least to degenerative changes in the muscles, in which all types—voluntary muscle, heart muscle, and involuntary muscle—are involved to a greater or lesser extent.

THE LOSS IN HEART WEIGHT DURING INANITION

The marked atrophy in the skeletal muscle is occasioned by the intense need of the more important vital organs, exhausted and shorn of nutritional reserves of protein, fat, glycogen and inorganic substances, all of which they attempt to replenish from the stores in the less essential voluntary muscles. That these muscles act as food reserve in a time of need is evident from several facts. Hibernating animals, during the feeding period, store large amounts of fat in the muscles. During the fasting period fat is consumed from the muscle stores. According to Miescher(6), the Rhine salmon, during its fasting period of migration, undergoes a great development of the sex glands at the expense of the musculature. The latter may lose over 50 per cent in weight. Green(7) reports similar observations for the Pacific salmon.

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*United States Mortality Statistics, 1923.

It is generally believed that the skeletal muscles lose very heavily in inanition, but that the heart muscle loses comparatively little. In 1866 Voit(8) reported in two cats an apparent loss of only 3 per cent in heart weight. These observations, indicating relatively small loss in the heart during inanition, have often been cited in the literature in support of the theory that the most active organs, like heart and brain, lose relatively least during inanition. This is a gross error. As a matter of fact, the loss in heart weight can be even as great as the loss in the peripheral musculature. It is surprising to find such an error in the text books and to learn that it has been handed down from teacher to student until it has become universalized knowledge. Even such writers as Graham Lusk (The Science of Nutrition) and J. J. R. Macleod (Physiology and Biochemistry) in their very latest editions still carry the error, in spite of the fact that many investigators have proven the contrary facts to be true.

Groups	Number of Cases	Estimated Loss in Body Weight Per Cent	Average Heart Weight Observed Grams	Average Heart Weight Estimated Loss Per Cent
1. Insane. No chronic organic disease.				
a. males	6	41.6	206.0	33.0
b. females	5	37.7	158.0	36.5
2. Chronic diarrhea	7	48.4	179.7	45.0
3. Malignant growths	25	38.0	221.7	33.2
4. Chronic general infections	31	43.9	223.0	30.7
5. Tuberculosis	29	43.0	223.0	31.9
6. Aged. Various conditions	20	35.8	271.0	18.3 (29.6)*

The human adult suffers great loss in cardiac weight during inanition. Hirsch(9) observed in 1899 that in cachexias the cardiac muscle is reduced in proportion to the skeletal musculature and body weight, except in edema. This observation was confirmed by Meyer(10) in 1917 and by Roessle(11) in 1919. Schultzen reported in a starved girl of nineteen years that the heart was small and devoid of fat. Curran(12) also found the heart very small, about 5 ounces, in an old woman who died from starvation. Bright(13) observed a heart weight of 7¾ ounces in the case of Harriet Staunton, with a final body weight of 74 pounds.

WEIGHT OF HEART (IN GRAMS WITH RELATION TO NUTRITIONAL APPEARANCE OF THE PATIENT.

Color	Sex	No. of Cases	Very Emaciated	Emaciated	Thin	Well Nourished	Fat	Obese
White	Male	636	251	273	293	342	361	414
White	Female	385	244	266	298	353	332	340
Negro	Male	279	201	234	258	267	323	329
Negro	Female	234	209	220	231	279	292	356

In a series of 459 autopsies upon victims of an Indian famine, Porter(14) in 1889 found in 45 per cent of the men a heart weight under 6 ounces, the average weight being about 5⅛ ounces. In the remaining cases the heart weight averaged only 7 ounces. In 37.4 per cent of the women it was below 5 ounces (average 4.24 ounces); the remainder averaged barely 6 ounces. For all men autopsied the heart weight averaged 6.7 ounces (ratio to body weight of 1:196) and for all women, 5.3 ounces (ratio to body weight of 1:180). For comparison we give Quain's European ratio(15) of 1:158 for men and of 1:149 for women.

Interesting data with reference to cardiac weight have been recorded by Krieger(16), Bean and Baker(17), and Pearl and Bacon(18). Krieger at the pathological institute at Jena observed the heart weight of adults suffering from malnutrition. In estimating the loss in weight, the normal heart was assumed to be 0.5 per cent of the initial body weight. This initial weight was calculated from the body length by means of Gartner's formula(19).

It will be observed that the loss in weight of the heart is very great, although relatively slightly less than the total loss in body weight.

Bean and Baker collected their data from adults coming to autopsy at Johns Hopkins Hospital and Charity Hospital of New Orleans. They excluded pathological hearts. They classified their data according to the nutritional appearance of the individual, the actual body weight being unknown.

THE GREATER RESISTANCE OF THE HEART IN THE YOUNG

The loss in the weight of the heart depends to some extent upon age. During inanition the heart is more resistant in the young than in the adult. Bechterew(20) observed in newborn kittens and puppies a loss in heart weight relatively less than in body weight. Jackson(21) held young albino rats from 3 to 10 weeks of age at constant body weight by underfeeding, but found no decrease in heart weight. Barry(22) observed the cardiac weight of the atrophic offspring of underfed pregnant rats and reported an average cardiac weight 8 per cent above normal. Trowbridge, Moulton and Haigh(23) found the heart weight approximately normal for body weight in young steers of various age irrespective of the plane of undernutrition.

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*The heart in the aged is assumed to be normally 0.58 per cent of the body weight.

In experiments where loss of heart weight has been recorded in young animals the loss was quickly recovered by subsequent periods of ample feeding. In underfed rats, after being kept on a maintenance diet from the age of three to twelve weeks, Stewart(24) found a decrease in heart weight of 16 to 34 per cent. An overcompensating recovery of 17 per cent occurred after a period of adequate nutrition lasting four weeks. Normal relations in weight, however, were found after sixteen weeks of refeeding. Jackson and Stewart(25) reported nearly normal heart weight in rats fed adequately after a period of underfeeding. Jackson and Stewart gave sufficient food to rats after various periods of severe early underfeeding. They observed that the heart appeared slightly above normal in weight.

Interesting data have been gathered as to the condition of the heart in athreptic infants. DeTommasi(26) and Thiercelin(27) stated the heart is small in infantile atrophy. Bouvaird and Nicoll(28), in an extensive series, found the heart weight in general reduced nearly in proportion to the body weight. On fluoroscopic examination of living emaciated infants the heart appeared diminished in size. Nicolaeff(29) found the heart weight usually 20 to 40 per cent and sometimes 50 per cent subnormal for age in famine-stricken children in Russia. Stefko(30) observed greater cardiac atrophy in the female, especially about the age of puberty. Marfan(31), however, claimed the heart in atrophic infants very resistant to inanition. Jackson(32) believes that there is a relatively greater cardiac resistance to inanition during infancy than in the later years of life. From his own data he draws the conclusion that in malnourished infants the heart weight approximates the normal for corresponding age. He also observed a marked loss in the weight of the heart in the adult tuberculous, but not in the tuberculous child.

It is evident from these tables that the weight of the heart is a variable, depending upon the general nutritional condition of the individual. Pearl and Bacon concluded from a biometric analysis of 5000 consecutive adult autopsies at Johns Hopkins Hospital that a decrease in the absolute weight of the heart takes place in fatal tuberculosis. This decrease is probably due to inanition. Jackson(33) corroborated Pearl and Bacon with reference to the marked decrease in heart weight in tuberculosis in adults, but stated that tuberculosis in children is not attended by great loss in the weight of the cardiac muscle.

The adult animal behaves like the adult human being with reference to heart weight in inanition. Chossat(34) observed in starved pigeons that the cardiac fat usually disappeared. The heart lost about 45 per cent in weight, while the loss in body weight was about 54 per cent. Lukjanow(35) noted in two fasting cows a loss of 40 per cent in heart weight, the loss in body weight being about 36 per cent. Jackson(36) observed in albino rats with acute inanition an average loss of 28 per cent in heart weight and of 33 per cent in body weight. In chronic inanition he noted a loss of 33 per cent in heart weight and 36 per cent in body weight. Lazareff(37) reported an average loss of 10, 20, 30 and 36 per cent in body weight in a series of fasting guinea pigs. The corresponding losses in heart weight were 4.0, 8.4, 9.14, 20.97, and 33.33 per cent toward the end of starvation.

Pfeiffer(38), in a starved rabbit, noted an apparent loss of 28 per cent in heart weight, and 27 per cent in body weight. Sedlmaier(39) observed in starved rabbits that the heart lost relatively somewhat less than the whole body, although Beeli(40) reported an apparent loss of 72 per cent in heart weight, with a loss of only 51 per cent in body weight; and Heiz(41) observed losses of 34 and 36 per cent in body weight and corresponding losses of 20 and 24 per cent in heart weight. Voit(42), in a starved dog, observed a loss in body weight of 32 per cent and a loss of 22 per cent in heart weight. In various animals (guinea pig, rabbit, cat, dog) and birds (fowl, pigeon) mostly on total inanition, but some on water or incomplete inanition, Bourgeois(43) found atrophy of the heart muscle nearly in proportion to that occurring in other muscles, with an average weight loss of 45 per cent.

HEART WEIGHT IN AQUEOUS INANITION

A dry diet brings about great loss of heart weight. As a therapeutic measure it may, therefore, have disadvantages. Schuchart(44), in pigeons dying on a diet of dry barley, found a loss of 36 per cent in the average weight of the heart. Kudo(45), experimenting with albino rats, reported that in acute thirst the heart lost 30.6 per cent, and the whole body 36.1 per cent. In chronic thirst the heart loss was 46.3 per cent and the body loss 52.4 per cent. In thirst experiments in which young albino rats were kept at constant body weight for various periods, Kudo observed that the heart remained nearly constant in weight. Bowin(46) in rabbits and dogs kept on dry food states that the heart retains the original water content and undergoes relatively less loss in weight than does the body. The results of Bowin could not be confirmed by Skoritschenko(47).

NUTRITIONAL EDEMA OR FAMINE EDEMA

In nutritional edema, which is not to be confounded with the edema arising from cardiac insufficiency, some report normal heart weight, while the great majority of investigators note great losses in the weight of this important organ. Mann, Helm, and Brown(48) observed the heart normal in size in 200 necropsies. On the other hand, it must be stated that marked atrophy was noted by Hulse, Schittenhelm and Schlecht(49), Prince(50) and others. Paultauf(51) observed the heart weight below 300 grams and occasionally as low as 200 grams. Oberdorfer(52) reports weight of the heart even as low as 180 grams. According to Enright(53), the heart usually weighed only 3 to 5 ounces or 90 to 150 grams. In other cases, however, he found the heart normal.

THE HEART WEIGHT IN PELLAGRA

In pellagra the heart is atrophic although sometimes hypertrophic. The literature on changes in the heart muscle in pellagra has been reviewed by Marie(54), Raubitschek(55), and also by Harris(56). Nicholls(57) observed in eight cases of pellagra an average cardiac weight of 7½ ounces, the normal being 9 ounces. Lombroso(58) found in 26 hearts of pellagrins that 2 were slightly above normal, 5 slightly below, and 19 markedly below. Fraenkel(59) noted hypertrophy in only 12 out of 113 cases, while atrophy or emaciation occurred in 49 cases. According to Lombroso, the hypertrophic appearance of the heart is often deceptive on account of its flaccidity.

THE HEART IN BERIBERI

Hypertrophy is generally encountered in human beriberi, while the disease produced in animals experimentally gives rise to cardiac atrophy.

THE HEART IN RICKETS

The heart in rickets is hypertrophied. Jackson and Carleton(60) observed moderate hypertrophy in the heart of rats with experimental rickets. Wohlhauer(61) found in human rickets that the heart may be displaced due to thoracic deformity. He also found it to be hypertrophied, especially in the right ventricle, as a result of increased labor occasioned by impediment in pulmonary circulation.

THE HEART WEIGHT IN SCURVY

Scurvy is another disease in which an increase in the weight of the heart is noted. LaMer and Campbell(62), and also Bessesen(63) noted a slight increase in scorbutic guinea pigs. Schodel and Nauwerk(64) reported hypertrophy of the ventricles and dilatation of the right heart in 5 human necropsies. Erdheim(65) found in 21 out of 31 such necropsies cardiac enlargement, general marasmus and thoracic deformity similar to rickets. By means of roentgenograms Hess(66) was able to demonstrate enlargement of the heart in infantile scurvy. The greater size of the heart in scurvy is accompanied almost always by increase in pericardial fluid.

(To be continued).

FURTHER STUDIES IN THE PATHOLOGY OF GLAUCOMA*

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It is not my intention to attempt to convert any of you to believing my idea is the only one that has any reason for existence; nor do I expect all of you to agree with me. In presenting a discourse before any gathering of specialists such as this, I consider the discussion is the principal thing. I consider I have some reasonable foundation for my thoughts and shall give them to you for your consideration. I earnestly respect the opinion of those students who have diligently pursued the study of ophthalmology for a longer period, as 20, 30, 40 or more years. However, eighteen years of more or less continuous observation and study of this subject has encouraged a few more or less definite conclusions.

I do not consider it necessary or proper that I should take your time to review case histories. They would be of little or no value unless at least one case was reviewed as resulting from each different abnormality or cause. I prefer to direct your attention to a few more or less definite conclusions that will especially assist you in more thoroughly studying the etiology of your cases.

It is unnecessary, before a gathering of this kind, to review any of the symptoms of glaucoma, for all of you know too well the various chapters on diagnosis that are to be found in many ophthalmological publications. The large amount of literature contributed during the last year by various writers on the subject of glaucoma makes references not only unnecessary but burdensome. Most of it has been some review of various operations, or problematic studies relative to the local pathology of the disease. For these I refer you to any ophthalmological journal review.

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*Read before the Nebraska Academy of Ophthalmology and Oto-Laryngology, May 10, 1926.

Among the most outstanding articles were probably the one in which Brooks gave an exhaustive review and case history; Gradle, and Magetot and Bailliart's description of circulatory changes incident to glaucoma; and Calhoun's comparative conclusions from both local and general conditions with both surgical and non-surgical treatment.

Some years ago after watching a number of successive failures in the treatment of glaucoma, all under the care of specialists of national repute, each case given the usual treatment and operated by iridectomy, I began to search for some other theory and treatment. I was also convinced that many of the headaches referred to as eye strain, were not so much the result of slight refractive errors as of some condition causing toxic irritation of the ocular nerve terminals.

These various conditions caused me to begin my observations of the organs of internal secretion and their effect upon the eyes. Also I began a systematic taking of ocular tensions of all refraction cases. I consider a refraction has not been properly done unless a definite history and the tension have been taken also an ophthalmoscopic examination. The history and tension are the more important. If these have been properly done a large portion of the cases will be found before the glaucomatous attack has become destructive. For general consideration and differing somewhat from the idea advanced by many writers I have divided the causes of glaucoma into three classifications.

Traumatic: Resulting from any injury, solid or semi-solid substance irritation.

Infection: Resulting from any local or systemic focus and internal secretion derangement. The first two comprising a very small percentage of the total number of cases. I consider in the last classification is included such cases as those described by writers as cauesd by or clinically or physiologically showing changes in either the arterial or venous circulation, those cases showing a rise in tension either at the time of menstruation or any cyclic or systemic disturbance, also that large classification that has been termed idiopathic.

Here I also classify those cases that present the clinical and physical signs of glaucoma but without increased tension. I positively consider those oculists who have modestly made a diagnosis of glaucoma without increased tension were correct in their conclusions. However, I do not find it to always affect patients with a myopic refractive error.

It is generally admitted that glaucoma is by far more prevalent in the female than in the male. Inasmuch as the general activities, of the internal secreting glands, are similar in both sexes excepting those of reproduction, it is only logical to conclude that the organs of reproduction must have a major influence in the cause of the disease. The greater portion of cases of glaucoma in the female will be found to occur at three principal periods: First, at the time of adolescence; second, at the menopause; third, after the menstrual period has completely ceased. As previously stated, glaucoma may occur at any time, but the frequency of its occurrance at these principal periods does definitely encourage the conclusion that the internal secreting glands and especially the ovaries have a major influence.

Contrary to the impression that you may have already gained in my preceding remarks I do not consider the sex organs are the only ones that cause glaucoma, but as stated by me on previous occasions I consider the entire system, of internal secreting glands is under the influence of some localized nerve center. That it is only a question of which organ, upon being deranged in its activity, upsets, as it were, the equilibrium of this nerve center.

Here allow me to digress long enough to pay my respects to any mechanical devise for taking tension. It is a manner for making record for comparison of relative cases or from time to time of the same case. However, the variance in the contour of the cornea alone is enough to cause too much inaccuracy not considering the many other things that enter into the cause of its failure. I consider the only proper manner of taking tensions is with properly trained fingers. This at once gives complete use of that great sense of touch which instantly tells us not only of the tension but of the contour and structural resistance.

Summarizing: My observation has encouraged the conclusion that more often glaucoma is a result of improper functioning of the internal secreting glands; that oftentimes cases of glaucoma are not recognized because of incomplete examination; that the sense of touch properly trained is of more diagnostic aid than mechanical devises.

SHOULDER DISLOCATION

Applied Anatomy

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The humerus, scapula and clavicle are bones of the upper extremity and movements of the shoulder involve the motion of the head of the humerus in the shallow glenoid cavity of the scapula and the rotation of the scapula over the posterior wall of the thorax.

The articular capsule of the shoulder joint is attached to the ridge of the glenoid and the anatomical neck of the humerus. This capsule is loose, giving very little support to the joint, and within it are thickened longitudinal fibers called gleno-humeral ligaments, three in number, superior, anterior and medial. The coracohumeral ligament and the tendon of the long head of the biceps which runs through the joint, gives strength superiorly. It is the muscles with their elasticity and tonic contraction that hold the joint surfaces in apposition.

The arm is abducted to 90° by the deltoid muscle (axillary nerve) and the supraspinatus muscle (suprascapular nerve) through motion of the head of humerus in the glenoid of scapula. From 90° upward, it is the pull of the serratus magnus muscle (long thoracic nerve) on the vertebral border of the scapula resulting in a rotation of the scapula. There is also a slight rotation of the scapula in the first 90°. An inspection of the shoulder joint should be made from behind so if there is an ankylosis between the humerus and scapula, the movements of the scapula and the head of the humerus will not be independent of each other.

Dislocation of the shoulder usually takes place by a fall upon the outstretched, abducted, external rotating arm. As soon as the abduction reaches 90° the greater tuberosity becomes impinged beneath the overhanging acromion (Fig. 1). The acromion becomes the fulcrum, the abducted humerus the long arm, thus forcing the head of the humerus downward through the inferior and weakest part of the articular capsule. The long head of the triceps attached to the inferior part of the glenoid, determines whether it is an anterior or posterior dislocation. Dislocation anterior to the triceps is most frequent. The subscapularis muscle is attached to the lesser tuberosity of the humerus and stretches over the anterior part of the capsule. It is seen that in the anterior dislocation the head of the humerus leaves the capsule anteriorly inferiorly between the triceps and subscapularis tendons. The subscapularis muscle is not infrequently torn and the axillary nerve stretched over it is subject to injury, resulting in paralysis of the deltoid and teres minor muscle (Fig. 1). The brachial plexus and axillary vessels just anterior and slightly below the joint are always subject to pressure and may be severely injured in the dislocation or reduction. The head of the humerus first assumes the sub-glenoid position, then it usually becomes sub-coracoid in position (Fig. 2). If the force is continued, the head may then be forced beneath the clavicle (sub-clavicular).

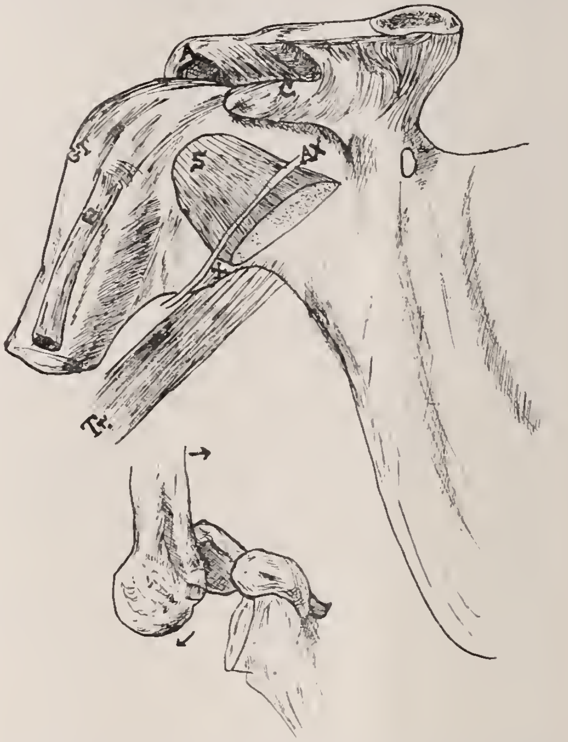

Fig. 1. Region of right shoulder joint. A. the acromion; B, the long head of biceps; C, the coracoid process; G. T., greater tuberosity; AX, axillary nerve; S, sub-scapularis muscle; Tr, long head of triceps; X, region where head of humerus is forced through capsule; small figure shows direction of forces in dislocation.

Reduction is effected by grasping the lower end of the humerus with one hand and the forearm with the other one. The patient must be flat on his back, which immobilizes the scapula. The forearm is flexed to a right angle to relax the biceps tendon and the arm pressed in toward the chest wall to tighten the posterior part of the capsule, which is to act as the fulcrum in the reduction. The arm is then rotated outward 90° until the forearm is parallel with the frontal axis of the body. In the normal shoulder this would relax the posterior part of the articular capsule, but with a dislocated shoulder this part of the capsule becomes wrapped around the head and neck of the humerus, thus keeping it at tension and permitting it to continue as the fulcrum. The arm is then flexed forward to the right angle (Fig. 3). This relaxes the coracobrachialis tendon which might be binding on the lesser tuberosity of the humerus and widens the rent in the capsule (Figs. 1-2).

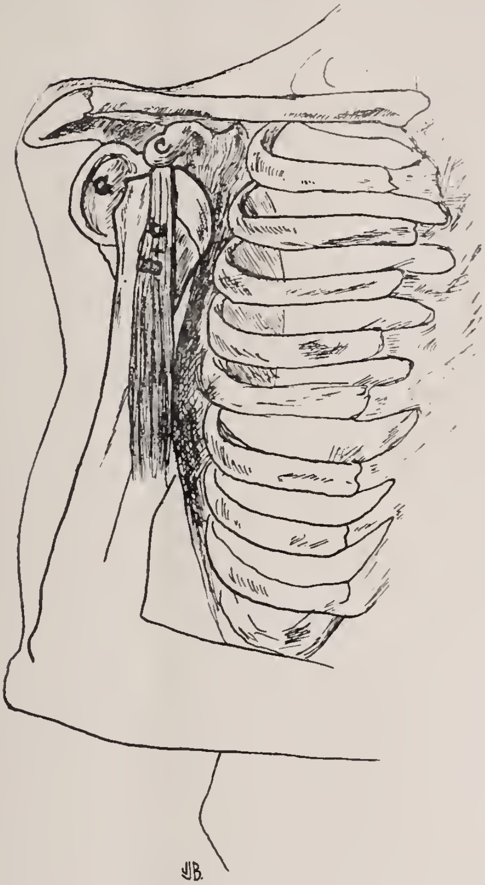

Fig. 2. Anterior dislocation, sub-coracoid position; C, the coracoid process; G, the glenoid fossa; B & C, short head of biceps and coracobrachialis tendons.

Constant downward traction must be applied on the humerus throughout this procedure. If these movements are followed the head of the humerus is now just anterior, medial and slightly below the rent in the capsule, and then by internal rotation and adduction which is merely putting the hand on the opposite shoulder, the head usually slips easily into its normal position. Too much emphasis cannot be placed on the firm grasp of the lower end of the humerus, since with a little knowledge of the anatomy and the relation of the head of the humerus to the rent in the capsule, the head may be easily guided to its normal position.

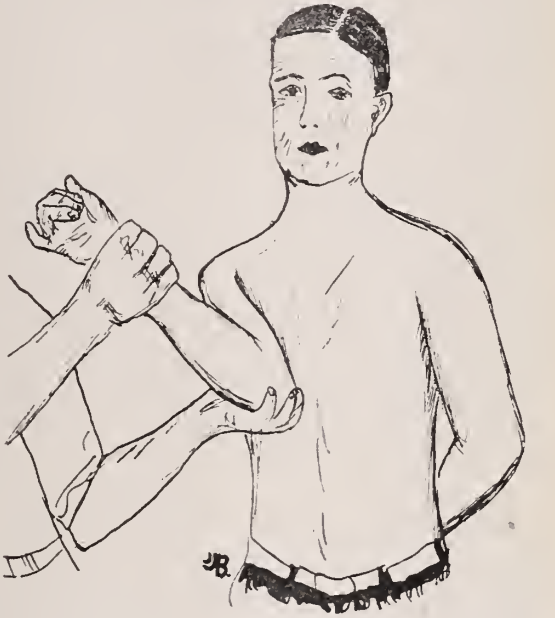

Fig. 3. Position after completion of first half of the manipulation. Forearm has been flexed; arm rotated outward and arm flexed anteriorly 90 degrees. The hand is then put on opposite shoulder, (internal rotation and adduction).

Posterior dislocation (sub-spinous) is rare. It usually results from abduction and internal rotation or a direct force. Reduction is effected by pushing the head directly into its socket.

JUVENILE TUBERCULOSIS*

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In order to discuss tuberculosis intelligently, we must have some definite conception of the disease as a whole. The modern view seems to be that it is a systemic disease, with a primary focus somewhere in the body, usually in the lungs, the location depending largely on the portal of entry. The bacilli from this focus spread to the regional lymphatic structures, usually the tracheo-bronchial nodes. These nodes enlarge but rarely caseate, and the infection remains latent until the organisms are re-distributed by the blood stream, usually back to the lungs where they set up the tertiary, or destructive lesions. Krause seems to have demonstrated that tubercule bacilli inoculated anywhere in the body will, by way of the pulmonary circulation, eventually reach the lungs and the hilus lymph nodes. If this is true it helps to explain the almost constant occurrence of hilus involvement, regardless of the type or method of infection. The time elements of this process are not fully determined, but the primary infection undoubtedly usually occurs in early childhood, the secondary lesions are mostly seen in later childhood, and the tertiary occur typically after puberty. Under conditions of low resistance and massive infection this time may be shortened to a few weeks, as we see in infants and following certain other diseases.

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*Read before the Lancaster County Medical Society, October 5, 1926.

It is difficult to form any certain idea of the prevalence of this type of tuberculosis in the general population. Certainly the prevalence among hospital and dispensary patients and autopsy material is very great, in some localities approaching 100 per cent. From the data at hand it seems probable that not more than 25 per cent of children at the age of 14 in this section would react positively to tuberculin skin tests, and, of course, a much smaller percentage have actual clinical tuberculosis.

The diagnosis of hilus gland tuberculosis is by no means easy, as I have intimated. A few points in the history should be mentioned as highly suggestive; exposure to a known case, underweight, fatigue either constant or alternating with over-activity, change of disposition, gastro-intestinal disturbances, particularly anorexia, certain skin lesions particularly erythema nodosum and eczema, eye conditions such as chronic blepharitis marginalis and phlyctenular conjunctivitis. Frequent colds are usually included in a list of this kind: I mention them only to say that colds are no more frequent in a tuberculous child than in one with any chronic disease, and are more often a sign of infected tonsils, adenoids or sinuses than of tuberculosis.

The general symptoms are usually very mild, consisting merely in slight fever, fatigue, and sometimes underweight. The characteristic brassy cough of mediastinal irritation is only found in marked enlargements. Expectoration is rare. Cyanosis of the face is significant, but seldom seen. Dyspnoea is also a late symptom.

The physical signs are few in number, and difficult to elicit. The most valuable is paravertebral dullness, on one or both sides, below the second dorsal spine. Second in importance is D'Espine's, which is a prolongation of the whispered breath sounds heard over the spinal column below the second or third dorsal spine. Bronchophony in the same region is usually accepted as positive. The Eustace-Smith sign is a humming sound heard over the upper end of the sternum when the neck is sharply extended. Tubular breathing over the mediastinum, either anterior or posterior, has some significance. The hilus dimple, seen in the right or left second interspace at the end of inspiration, should be looked for. Many other signs have been described, but those I have mentioned are the most useful.

The x-ray, properly interpreted, is of great value, but is not conclusive. Plates will show mediastinal thickening with a generalized increase in the lymphatic structures of the chest. Calcification is less often observed. The x-ray merely shows the enlarged glands, but gives no proof of the nature of the enlargement.

When all these signs are present we have only a child with a mild general toxemia and evidence of enlarged mediastinal glands. We still have no assurance that these glands are tuberculous. Here the cutaneous tests give considerable help. There is a good deal of misconception regarding the significance of these tests. Because Pirquet found that practically 100% of children in Vienna, over 12, gave a positive test, we assume that the same is true here, but such is not the case. The percentage here is closer to 30%, so that a positive Pirquet has a very definite significance, and in the presence of the other signs mentioned, is sufficient to clinch the diagnosis. Remember that a single negative is not conclusive and in a suspicious case should be repeated or better, followed by a Mantoux.

There are many conditions which must be differentiated, but I shall speak of only two. The first is simple malnutrition, from poor food and health habits. These two conditions, tuberculosis and malnutrition, are rather hopelessly mixed in our minds, but there are a few facts which may be set down as undeniable. Certainly not every undernourished child is tuberculous. Malnutrition is a symptom of tuberculosis, but it is a late symptom and not always present. The importance of malnutrition as a cause of tuberculosis has been overestimated. It probably has little to do with the primary infection, or even the development of secondary lesions. However, we know that the maintenance of normal nutrition is our best means of preventing the primary and secondary lesions from developing to the tertiary stage, and we ordinarily find the adult type only in mal-nourished children.

Another source of confusion is the presence of chronic upper respiratory infection. I believe it is impossible to make a diagnosis of this type of tuberculosis in a child who has infected tonsils, adenoids, or sinuses. All the findings I have mentioned may be present. Before making a positive diagnosis it is wise to remove these infected foci, thus clearing up the picture and making possible an accurate diagnosis.

The question of prevention resolves itself into two lines of endeavor. The first is to prevent, or rather to postpone, the primary infection. It is probably neither possible nor desirable to completely prevent primary infection, but we can at least postpone it until after the highly susceptible period of infancy. This involves separation of the child from an infected mother or other inmate of the household; boiling of all cow's milk used in infant feeding; education of the general population in measures to prevent the dissemination of tubercle bacilli; improvement in housing, hygiene, and infant care. Calmette's work on vaccination of new borns offers a hope of successful immunization, which if realized will simplify the problem.

In the absence of a sure method of preventing tuberculous infection, our principal efforts must be directed toward preventing the primary and secondary lesion from progressing to the tertiary stage. This means early diagnosis, continued observation throughout life, reporting of cases, so that the health authorities may function, and co-operation with the schools and city health departments in their health programs. The public consider a diagnosis of tuberculosis as a disgrace, and vigorously fight the very suggestion that it may be present. This viewpoint can be corrected only by education, and that must come largely from the physicians. This community is badly in need of some sort of preventorium, where suspected cases might be placed for observation, and early active cases treated for a short time. The work done by the city health department might well be greatly extended, and better co-ordinated with that done by the schools. Open window rooms have been instituted; these should be continued, and increased in number as soon as practicable. But above all the public must be made to realize that this disease exists, and must be taught to combat it, not to ignore it.

NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST, AND A. J. MILLER, M. D., PATHOLOGIST

Edited by

L. L. Davidson, M. D.

CASE NO. 21402. December 17, 1926.

A single, white girl, cashier, age 20, walked to the ward, Nov. 19, 1926, complaining of:

Menstruation prolonged over a month.
Backache and headache.
Fatigue.
Blotchy areas on the skin.
Swelling of the ankles.

She was entered on the medical service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: Patient was married last February and in March an induced abortion followed. A normal period occurred in April. In May she took one-half ounce of turpentine every other day for three doses, at which time a clot was passed. She was separated from her husband in July. In June, July, August and September menstruation was regular.

On October 13th menstruation began as usual but persisted up to the time of entrance (over five weeks).

About three weeks ago, she noticed small, red, pinpoint areas around the knees. These areas increased in number and size, enlarged peripherally and coalesced to form patches. New lesions subsequently appeared on the arms, legs, back and abdomen. At the time of appearance of these lesions she had a moderate sore throat.

She worked until one week before entrance and quit because of weakness, swelling of the feet, and occipital headache.

PREVIOUS HISTORY: Patient had an appendectomy in 1924, apparently with relief. There were no sore throats except three weeks ago. She had had some palpitation and an unproductive cough the previous week. There were no previous epidemic infections. Menstruation began at 12 years, being regular, every twenty-five days, lasting usually three to five days.

FAMILY HISTORY: There was one elder sister living and well. No history of cancer or tuberculosis in the family.

PHYSICAL EXAMINATION: Examination revealed a very pale, weak young woman, well nourished and of good general development. On the covered parts, more particularly on the thighs, back and sides of the abdomen, there appeared homogeneous brownish-red irregularly shaped patches which were not elevated nor indurated and caused no symptoms.

Head: Pupils were equal, regular, and reacted to light. There was no alteration in the visual fields and the hearing was normal. There was no nasal obstruction nor secretion. The tonsils were moderately enlarged and injected. A few hemorrhagic spots appeared on the right tonsil. Face was free from hemorrhagic blotches.

Neck: The thyroid was slightly palpable. A few pea-sized anterior cervical glands were felt and the posterior cervical chain was enlarged. These glands were both discrete and matted together but were not stony hard nor tender and were not adherent to the skin.

Chest: Chest was free from purpuric patches. The lungs were normal to expansion, palpation, percussion and auscultation. The apex beat was 10 cm from the midsternum in the fifth interspace and by percussion the left border was outlined 4, 6, 8, and 10 cm in the 2nd, 3rd, 4th, and 5th interspaces respectively. There was no enlargement to the right of the sternum. The rate, rhythm and sounds were normal.

Abdomen: The abdomen was rounded, plump, without masses or dulness in the flanks. There was some tenderness in the right lower quadrant. There was the right rectus appendectomy scar. From the costal border downward, but particularly on the back and sides were these irregular purpuric patches.

Extremities: The knee reflexes were present and there was no Babinski. On the thighs the purpuric blotches were most marked and diminished in number and intensity downward, being absent on the feet. No lesions appeared on the hands.

LABORATORY: Catheterized urine specimens 11-20, 11-27, 11-29, showed a specific gravity of 1020-1013, acid reaction, 1+ and 2+ albumin, no sugar nor diacetic acid and a few red blood cells, numerous granular and hyalin casts microscopically.

Blood examinations 11-20, 24, 25, 27, 28 and 30 demonstrated a diminishing hemoglobin 22% to 15%; R. B. C.'s dropped from 2,330,000 to 1,200,000; W. B. C.'s increased from 102,250 to 350,000 and large mononuclear cells increased from 99% to 100%. On two occasions, by the oxidase stain, 71% and 92% of the white cells showed oxidase granules while 29% and 8% did not. The blood platlet count was 27,000 and blood cultures on 11-23 and 11-28 were negative. The clotting time, 11-19, was six to eight minutes and the bleeding time was four minutes. The blood Wassermann was negative. Blood pressure ranged from 90 to 110 systolic and 60 to 86 diastolic.

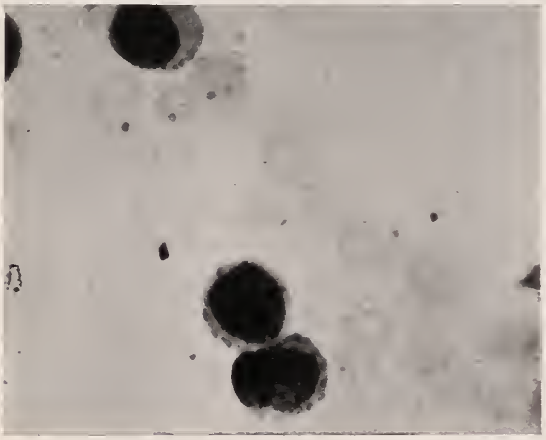

Fig. 1. Blood smear with Wright's stain. There were many large mononuclear leukocytes to the field. The cytoplasm contained granules which were later found to take the oxydase stain. The nucleus was blue and quite dense.

Icterus index on 11-24 was 7. Van den Bergh was negative by the direct and 0.7 by the indirect method. Blood was found microscopically in the feces.

PROGRESS: On admission, temperature was 99, pulse 110, respiration 20. Subsequent readings were always higher, temperature irregularly ranged from 100 to 104, pulse rose from 100 to 150, respirations increased from 17 to 50.

On the second day, patient had the first hemorrhage from the nose, losing about six ounces of blood. Vaginal packs were inserted to control bleeding. Consultation by Dr. Tomlinson suggested infectious agent as etiological factor and requested pelvic examination. Temperature ranged from 101 to 103. A vaginal examination made by Dr. Taylor the following morning reported "Cervix soft and dilated to size of tip of finger, anteverted. Uterus slightly enlarged and retrodisplaced. Left side is normal. Right side is tender, an indefinite mass, possibly 2-3 cm in diameter is felt. On account of abdominal distension and tenderness examination was unsatisfactory."

On the fifth day, over the right cubital space, numerous petechial areas appeared, with fresh, bright red blood extravasated into the older brownish-red areas. There was a tendency to scale over the old hemorrhagic patches. A dark mass was passed vaginally today which was reported by Dr. Miller as a blood clot.

On November 27th (eighth day) dyspnoea prevented sleep. There was a soft systolic murmur over the entire precordium, bronchial breathing at the right base and dulness.

November 28th. The glands in the neck were unchanged but there were palpable glands in the axillae. Dulness over the entire right chest had increased to flatness. There was diminished expansion, absence of fremitus and breath sounds except in apex. A barely palpable spleen was noted by Dr. Bridges.

November 29th. An x-ray report by Dr. J. S. McAvin: "A view of the chest in the dorsal decubitus position shows a mottling of the left lung most marked at the base, a marked increased density of the whole right chest with no lung markings evident except at the apex. The heart shadow is pushed over slightly to the left". Notation was again made of a palpable spleen, not particularly enlarged.

November 30th. During the night patient had to be moved into the hall and windows opened because of orthopnea. Pulse became rapid and weak. She died a cardiac death.

DR. A. D. DUNN'S DISCUSSION

The outstanding complaint and probably the one which caused the patient to seek medical aid, was the disturbance in the menstrual function. Symptoms of disturbed menstruation are very difficult to interpret. There are so many influencing general physical and psychic factors that may enter into the disturbance, that it makes for much difficulty and confusion in interpreting this symptom. In the case that we have today, there is disturbed menstruation; yet I believe that we shall find that this symptom of disturbed menstruation will contribute nothing to the solution of the disease which produced the death of the patient. We might pause for a moment and group some of the more common causes of disturbed menstrual periods.

1. Amenorrhea, or the absence of menstruation.
    - a. Pregnancy is by far the most common cause in the child bearing period.
    - b. Debilitating diseases or accidents in the life of the patient.

It is normal to have cessation of menstruation following surgical operations, pneumonia, typhoid, or any depleting condition.

- c. Endocrinological dysfunctions and the menopause occur with menstrual disturbances.
- d. Pelvic diseases are often responsible for the cessation or disturbances of menses.

2. Menorrhagia, or excessive menstruation.
    - a. Local uterine conditions, such as fibroids, are frequently the disturbing agents.

  b. General pelvic diseases—infections frequently produce menorrhagia instead of amenorrhea.
  c. Endocrinological. Sexual excitement, often unrecognized, cause menstrual disturbances.

3. Metrorrhagia, or abnormal uterine hemorrhage may be a symptom denoting one of many conditions.
  a. Carcinoma.
  b. Fibroids occasionally cause abnormal uterine hemorrhage apart from the menstrual period.
  c. Arteriosclerosis may result in metrorrhagia.

A patient came into my office the other day who was seen six months ago because of excessive menstrual flow. She had at that time an almost constant menstrual flow with only a few days intermission. She was being courted rather strenuously at that time. I could find no other cause for her excessive menstruation and told her that it would probably pass off with time. She married several weeks later and has had regular, normal periods since that time. Menstrual symptoms are often impossible to evaluate.

In the case under consideration the disturbed menstrual function might well be explained on her depleted general condition or by some local uterine condition.

Three weeks before entry brownish-red spots appeared around the knees. Lesions subsequently appeared on the legs, arms, back and abdomen, and coalesced to form patches. At the time of their appearance the patient had a sore throat. The appearance of petechiae or purpuric lesions are always significant. The common cause is either toxic or infectious in nature. Under this blanket heading the rheumatic petechiae and purpura fall. It is interesting to note in connection with a possible infectious purpura that there had been a sore throat and that the tonsils were enlarged. Purpuric lesions are common in sepsis and endocarditis of the subacute bacterial type. Whether it is the destruction of the cells of the vessel wall allowing the blood to permeate the walls more readily or a colloidal effect on the walls making them more permeable, it would be difficult to say. Purpura may also occur in the idiopathic blood diseases, such as pernicious anemia and especially in the various forms of leukemia.

In the physical examination a pale, weak young woman was described whose general development and nutrition were normal. Apparently the observer was impressed with the anemia. In a pale young woman there are always certain conditions to be primarily considered:

1. Chlorosis.
2. Infections—common among which is a subacute bacterial endocarditis.
3. Blood disease, particularly leukemia.
4. Starvation, either self-imposed or incident to disease.
5. Hemorrhage.

This patient was in good nutrition so the disease was not a cachexia producing disease. Supporting either infection or blood disease was the description of the cutaneous lesions. On the covered parts there appeared homogeneous, brownish-red, irregularly-shaped patches, having no elevation nor definite line of demarcation. These lesions probably answer the description of purpura hemorrhagica.

Hemorrhagic spots were also noted on the right tonsil and both the anterior and posterior cervical glands were palpable. Ordinarily we look upon enlargement of the anterior cervical glands as being due to infection in the tonsils, and enlargement of the posterior glands suggest paranasal sinus infection. These glands were both discrete and matted together, and were not stony hard nor tender. Chronic infectious processes may give rise to enlarged glands that are not tender, and we must remember that tuberculous glands are not tender. Nothing is said here of either the epitrochlear or axillary glands and no mention is made of the spleen. Such knowledge would help us in eliminating and differentiating at this point the possibility of blood diseases, particularly leukemia, as against infection.

The chest was apparently normal. From the measurements of the heart we assume that it was normal in size, and shape. Rate, rhythm and sounds were unchanged.

There was tenderness in the right lower abdomen, which we cannot associate with the physical findings. Nothing was said about a spleen.

Intern: The spleen was not felt at that time.

Dr. Dunn: Was it felt at all during her illness?

Intern: Yes. It was difficult to pick up until the last two or three days of her illness. On the third day after admission the spleen was felt by Dr. Bridges. It was easy to palpate about two days before death.

Dr. Dunn: Catheterized specimens of urine always demonstrated albumin, granular casts and a few red blood cells. No mention was made of leucocytic casts nor of pus cells. With these positive findings and with the absence of pus cells and leucocytic casts, we would expect to find a cloudy swelling of the kidneys.

During her short stay in the hospital, the red blood cells, although little over half the normal number, decreased practically one-half. There was no evidence of internal or external bleeding sufficient to have caused such a diminution in the red count. The white count, on the other hand, increased to practically three times the count at entrance, and the entrance count was fifteen to twenty times normal. Practically all these cells were mononuclears and from 71 to 92 per cent of the mononuclears showed oxidase granules with the oxidase stain. The blood platlet count was low, 27,000. The clotting time was six to eight minutes with a normal bleeding time, four minutes. Nothing was said about the contraction of the clot. This is important for we do not have here a case that tallies with the ordinary hemorrhagic purpuras. In hemorrhagic purpuras in which there is a diminution of the blood platlets much below normal, a normal coagulation time and a prolonged bleeding time, splenectomy is a primary therapeutic measure. Our case does not fulfill these requirements. The coagulation time was prolonged and the bleeding time was normal. If this were a normal clotting time, a prolonged bleeding time, and a low platlet count, with a failure of the retraction of the clot, thrombocytopenia would be seriously considered—a condition in which purpura commonly occur. It is to be noted that the Wassermann reaction is negative.

The Van den Bergh was negative on the direct and 0.7 by the indirect. This is practically the upper limit of normal and probably suggests a beginning cloudy swelling or infiltration of the liver cells with white cells.

Subsequent examinations for the most part point to the pelvic organs. The vaginal examination by Dr. W. H. Taylor is to be noted. The soft dilated cervix might suggest a possible pregnancy but in infections and anemias a soft cervix is not a particularly uncommon thing. It is possible with the history of an induced abortion, and the right sided, tender, indefinite mass, that a salpingitis was present: but I am not inclined to hazard such a diagnosis.

I would rather associate this early tenderness in the right lower quadrant with a developing chest condition. About three days before death diminished mobility of the right chest was noted, together with an absence of fremitus, definite flatness and an absence of breath sounds. The left side was apparently normal. These physical findings point definitely toward fluid on the right side. Plates taken in the dorsal decubitus position show a markedly increased density of the whole right chest with no lung markings evident at the base, and an increased mottling of the left lung most marked at the base. The right side of the x-ray is characteristic of fluid, but I am at a loss to account for the mottling of the left side which is more than normal. This is not characteristic of bronchopneumonia or tuberculosis. If due to tuberculosis something has been superadded and I wonder if these are not leukemic areas also.

Let us review our data before formulating an anatomical diagnosis. A girl of 20 years, previously well, has had two abortions soon after marriage, following the oral administration of turpentine. The periods were apparently normal until five weeks before entrance, six weeks before death. Beginning at a normal time menstruation persisted to death. A sore throat preceded the purpura, glandular enlargement, pallor and weakness. Her nourishment was retained. An unproductive cough antedated the dyspnoea which rapidly increased and preceded the positive findings in the right chest.

We will attempt to construct an anatomical diagnosis. 1. Myelocytic leukemia (acute). The trouble began in the throat, followed by an enlargement of the glands in the neck, a scurvy-like disturbance in the mouth, a fever and purpura. Even without the blood picture, this syndrome points toward an acute leukemia. There are two varieties of acute leukemia, the lymphatic and myeloid types. The lymphatic type formerly has been supposed to be the most common form and the myeloid type the less common. It has recently been proven that in reality the myeloid type is by far the most common. Differentiation is to be made between lymphatic leukemia, myeloid leukemia and mononucleosis. In this case, the oxidase stain was used to demonstrate the preponderance of myelocytic cells. The essential findings in this case were: (a) the subleukemic state; (b) preceded by the mouth situation with enlarged cervical glands; (c) an early death (4 months); (d) the course was evidently febrile throughout and suggested an acute infection; (e) the staining characteristics of the cells were definite. The purpura hemorrhagica we will include as a part of this myeloid leukemic complex.

2. Cloudy swelling of the kidney is to be inferred from the albumen and granular casts, with the absence of pus cells and leucocytic casts in the urine.

3. Cloudy swelling of the liver with leukocytic infiltration and liver damage is suggested.

4. Myeloid spleen. Such a finding we should expect and its presence was noted by Dr. Bridges three days before death.

5. Myelocytic changes in the bone marrow and lymph glands, especially the lymph glands of the neck which entered into the process so early.

6. An effusion into the right pleural cavity, probably hemorrhage, is shown by both phyical findings and x-ray. Hemorrhagic effusions are common in acute leukemias. The mottling in the left lung may well be leucocytic massings, bronchopneumonia or possibly tuberculosis.

We will not expect to find anything like retained fetal membranes in the uterus. We are inclined to interpret the increased menstrual flow as a condition that goes with the leukemic disease.

Dr. Bridges: I think attention ought to be called to the peculiar color of the hemorrhages in the skin. They did not correspond to the ordinary purpura in regard to the display of color. As a rule there is a gradual change of color but these lesions did not change.

In regard to the petechiae, there were very few of them. They resembled the bite of an insect about which she was questioned. They, too, were not the characteristic color of leukemia. I would like to have the students picture themselves in the country without laboratory facilities. Without a means of examining the blood in this case, it would be difficult to make a diagnosis. The sore throat, fever, systolic murmur, etc., might all fit in with a septic process.

Dr. Dunn: I am interested in your description of the skin lesions. They were either infiltrated or purpuric areas. Leucocytic infiltration is possible.

Dr. W. N. Anderson: Are these lymphocytes then?

Intern: They are myeloid cells.

Dr. Dunn: The primordial cell is the hemoblast. Its future cannot be determined. In the white series, the leucoblast is the primordial cell. It may develop into either the lymphocytic or myeloid cell. They are very much alike until late in the differentiation.

DR. A. J. MILLER'S DISCUSSION

The skin lesions were characteristically those of hemorrhage and not of infiltration by leucocytes. There was fluid in the right chest and it was bloody. In addition to the fluid on the right side, the pleura over the diaphragm near the hilus was covered with irregular masses of exudate, a cross section of which showed localized areas of necrosis. The masses grossly might be leukemic nodules. I reserve the interpretation of these nodules until after microscopic study. The areas of necrosis were quite typically those of tuberculosis. The mucosa of the uterus showed hemorrhage. Lymph nodes everywhere were slightly enlarged. The largest was 12 by 18 cm. In getting out the lymph nodes of the axillae great numbers of petechiae were seen in the fat. These lymph nodes were not caseous. Those in the mesentary had large areas of necrosis. The bone marrow was grayish-red, not dark blood-clot red like that of pernicious anemia but grayish-red. In the ileum were several ulcers elongated and extending along the lymph spaces. The lymph nodes in these areas were caseous.

MICROSCOPIC

1. Kidney. This patient had taken two doses of turpentine but the glomeruli were in good shape. There was a localized group of tubercles and some hyalin casts. All through the tissue there were some leucocytes. Whether or not this was the result of the turpentine I cannot say. I think it was a lesion which might be the result of taking turpentine. The tubule cells were large and granular.

2. Spleen. It weighed 210 gm. There were very large cells. Practically no lymphoid nodules were seen. The cells were similar to those found in the blood stream. The histology of the spleen, lymph nodes and bone marrow was very similar. The lining cells, composed of huge mononuclears, were similar to those in the blood stream.

3. Bone marrow. The picture was not much different from that of the spleen. There were very large mononuclears and since this patient died in an intermission rather than at a time when she was having a leukemic shower the origin was hard to trace and might be traced to these large cells in the bone marrow.

5. Exudate on the diaphragm. There was dense leucocytic infiltration of granulation tissue and areas of necrosis. In this material tuberculous bacilli were found. This was not the typical reaction for tuberculosis, it is modified by leukemia.

6. Liver. In the connective tissue was a very dense infiltration of leucocytes. There were no tubercles.

7. Lung. There was considerable fluid in the air sacs. There were some red cells in the fluid. Areas of necrosis were present. A typical tuberculous lesion here indicated that these lesions were older.

8. Intestine. One of the ulcers in the ileum was shown. The infiltrating zone was very much modified because of leukemia.

To sum up our findings, there was myologenous leukemia and tuberculosis. I would suggest that the old tuberculous lesion in the lung is older than the leukemia. As to the relation of cause and effect, so far as I know, there is none. The leukemia is not the result of tuberculosis. It is simply coincident tuberculosis involving the lungs, lymph nodes and intestines.

Cloudy swelling of the kidneys is practically always present in patients who die with toxin in their bodies. Liver and other tissues are similarly damaged. The tissues are less resistant because of the leukemia, and have a hemorrhagic tendency. This is probably the result of some toxic agent on the endothelial wall. The mass in the left side of the uterus proved to be a follicular retention cyst.

Medical men have two views of leukemia, first, that it is an infectious disease; second, a neoplastic disease. To support the idea that this is a tumor process we can point to a few facts: (1) It is always fatal; (2) metastasis are found in the kidney, spleen and bone marrow; and (3) these tissues are made up of atypical cells and we have difficulty in tracing them to their mother cell. There seems to be several infectious agents found in leukemic patients which are said to account for the disease. No one predominates. This patient had with leukemia, tuberculosis. Sometimes they have staphylococcus, diphtheroid, Vincent's or colon bacillus infections.

No one organism is constant. To support the idea that this is probably an infectious disease we can point to, (1) a general involvement of lymph tissues all over the body. Malignant neoplastic diseases do not do that in the beginning. They begin as a primary focus and extend by transplantation or invasion. When we find a carcinoma of the stomach we do not expect all the epithelium to be involved. (2) They have remissions. (3) Another thing which would make you think that this probably is not a malignant disease but the result of a foreign toxin is the fact that they show toxic symptoms. Tumors in themselves are not toxic.

Dr. Bridges: Is the Intern sure about the absence of pus cells? The picture seemed to be a focal affair rather than a generalized process.

Dr. Dunn: This nephritis must have been toxic. Did you find any marked inflammatory reaction in the kidney?

Dr. Miller: No. It is generally not accepted as a nephritis and should go down as a cloudy swelling. It is a chemical change.

Dr. Dunn: Was there an absence of cause in the cavity of the uterus to explain the menorrhagia?

Dr. Miller: The endometrium was hemorrhagic. I think that is only a manifestation of the patient's tendency to hemorrhage. No other pathology in the uterus was found.

CASE NO. 21186. December 3, 1926.

A baby, seven weeks of age, was transferred to the University Hospital from the Child Saving Institute 10-25-26 because of failure to gain. It was entered on the service of Drs. McClanahan and Hamilton.

So far as is known delivery was non-instrumental and normal and the birth weight was 6 pounds and 3½ ounces. The babe entered the Child Saving Institute at birth and had been on part breast and part formula feedings. On entrance to the hospital seven weeks later, the weight was 6 pounds and 7 ounces. There was no family history.

Examination revealed a very much emaciated baby with dry skin, distended abdomen, a temperature of 98.6° rectally, pulse 90 and respirations 28. The skin was transparent and there was marked pallor. The fontanelles were not particularly depressed. The ear drums appeared normal. There was no nasal discharge. The tonsils were enlarged but not inflamed. The chest was clear. The heart sounds were apparently normal. No masses were felt in the abdomen. There were no deformities. The baby was not active.

Urinalysis on 10-27-26 showed a specific gravity of 1020, acid reaction, a trace of albumin, no sugar, a few granular casts and pus cells. The blood Wassermann was negative. Blood counts were not successful as the blood clotted so rapidly.

The child was in the hospital five days. The temperature ranged from 99.4° to 100.6°, pulse weak and thready 96-140 (?), respirations 25-36. The anterior fontanelle became more depressed, the babe more toxic. On the third day the ear drums were examined but no abnormalities were found. Intra-peritoneally, 150 c.c. of normal saline was injected. The following morning a few drops of blood were obtained for blood matching and 115 c.c. of compatible blood were given into an arm vein. This was followed by 250 c.c. normal saline intra-peritoneally. At the same time the ears were examined by Dr. Lemere who reported slight redness and some bulging. Both were lanced but no pus obtained. Cyanosis developed, the respirations became weak and the babe died the morning of 10-30-26.

DR. A. D. DUNN'S DISCUSSION

From this history a babe with a normal birth weight of 6 pounds 3½ ounces, after seven weeks showed a gain of only 3½ ounces. A baby should ordinarily gain from 3 to 8 ounces a week.

In the physical examination there was evidence of loss of weight and dehydration. From the urinalysis one would expect to find a certain amount of cloudy swelling of the kidneys.

No mention was made in this record of diarrhea. We should expect it to be present.

Intern: Diarrhea was present. The stools were a soft greenish yellow, varying from four in number the day of entrance to thirteen the day before death.

Dr. Dunn: Formerly, when a baby died of what was termed "marasmus" there was an autopsy, but no one became any wiser as to the actual cause of death. Recently there has been some very illuminating work done which helps in the solution of these puzzling cases. McKim Marriott and others have shown that sinus infection is almost invariably present in such cases of marasmus. The sinus most commonly involved is the mastoid. Marriott states that 75 per cent of the out-seasonal diarrheas occurring in infants are due to infections with a hemolytic streptococcus primary in the sinuses usually in the mastoid. One symptom of mastoid trouble worth emphasizing is sagging of the superior, posterior wall of the external meatus adjacent to the drum.

If the work of Marriott and his co-workers is true, we shall expect to find a sinus infection probably mastoid in this case.

ANATOMICAL DIAGNOSIS

1. Dehydration, anhydremia or marasmus.
2. Enterocolitis.
3. Sinusitis—probably mastoiditis.
4. Cloudy swelling of kidneys.

DR. A. J. MILLER'S DISCUSSION

Gross Examination: The body was extremely emaciated. The eyes were sunken, the skin was folded and wrinkled and the abdomen distended. There were no discharges.

The gastrointestinal tract was distended with gas. The mucosa of the distal part of the ileum and the ascending colon was the seat of an acute inflammation, diphtheroid in type. The lining was thickened, firm, injected and here and there were small flecks of necrotic membrane. Similar changes were found in the sigmoid. The mesenteric glands were large, soft and red.

The liver, heart, kidneys and spleen were all soft and friable. The splenic pulp was abundant.

The ears and sinuses were examined. The left middle ear was normal. The right one contained purulent material under tension. The mucosa was eroded and replaced with granulation tissue. Direct smears contained tissue debris, leukocytes and cocci.

Microscopic Examination: Examination of the viscera of the trunk showed acute degeneration of heart, liver, kidneys and acute splenitis.

In the intestinal tract there was necrosis of the mucosa with some granulation tissue formation. Leukocytic infiltration was dense, consisting chiefly of polymorphonuclear leucocytes, but there were many lymphocytes and plasma cells. Fibrin was present but not abundant.

Opening the middle ear there was erosion of the mucosa with granulation tissue and a dense leukocytic infiltration.

The blood taken from the right atrium contained staphylococcus aureus in pure culture.

This patient, no doubt, died of infection, and at first glance it seems that it is primarily an infectious condition. On further and more careful consideration, however, it is not possible to say whether or not it is primarily an otitis media with secondary enterocolitis, the infection being directly inoculated into the mucous membrane from material swallowed; or a primary enterocolitis with the otitis media secondary and metastatic; or whether or not this is a metabolic disease with the infection a complication.

PERSPIRATION OF THE FEET — TINCTURE OF IODINE

Andruszewski (Univ. skin clinic. Lemberg) reports that for many years he has been trying a simple and cheap means on himself and clinical as well as private patients — iodine. 20 gr. of tincture of iodine are enough for the cure. Rhagades, blisters, etc., must, of course, first be removed. This is effected usually in a few days by the wax-borax salve used at the clinic: R. Acidi borici, Glycerini ana 10, cerae flavae, paraffini liquidi ana 20, Vasel. flav. 50. After a warm foot bath (101 to 104) with soap and water for a quarter of an hour the points secreting especially profusely and designated by macerated skin (under and inner surface of the toes, sole of the foot and lateral borders of the heel) are painted once or twice with the tincture until an intensive brown coloration of the epidermis has appeared. This hardly causes a slight burning, and under any circumstances not the sensations caused by the formalin preparations. Then the above wax-borax salve can be rubbed into the skin all over the feet, whereupon sox may immediately be put on. The single procedure is usually sufficient and brings about an improvement even in the most obstinate cases, but can be repeated in 10 to 20 days. The disease is then permanently relieved and it is only necessary to use the wax-borax salve once a week thereafter. (D. m. W. Nr. 19, 1926.)

The height of dieting is the individual who refused to wear a stiff collar because it had too much starch in it.—Rutgers Chanticleer.

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COMMUNITY DISTRICT HOSPITALS

Recent press reports indicate that the question of establishing a community hospital has been under consideration in an important county seat town in this state.* In the absence of more definite information, it may be assumed that the plan was to finance the community hospital by subscriptions from individuals in the community sought to be benefited.

The matter of providing hospital facilities in many community centers needing the service, is becoming increasingly more urgent. Surveys have shown a scarcity of doctors in most rural communities and that generally speaking, urban communities have the best doctors and that because of better doctors, hospital facilities and nurses, urban communities are at least four times better served with scientific medical care than rural communities.** The agricultural west with its scattered population and relatively fewer and smaller towns feels the need more than do manufacturing and mining districts with larger urban populations supplied with hospital facilities.

Heretofore in most instances, hospitals have been essentially private institutions, the ownership resting, either in the private enterprise of physicians and surgeons, or in religious or fraternal organizations. To these must be added industrial hospitals caring for sick and wounded employees. In a few states, the commonwealth appropriates certain sums of money and apportions it among a selected list of hospitals as a sort of endowment to aid the work of caring for the needy sick.

It is well known among medical men and others who have knowledge of the financial affairs of hospitals, that hospitals as institutions are not profitable investments. The income from pay patients is not enough to take care of the overhead expenses. The burden of the upkeep therefore falls upon the owners, whether physicians, surgons, religious or fraternal organizations.

The community benefited should bear this burden.

We have school districts, drainage districts, irrigation districts—why not have community hospital districts?

We spent vast sums of money in every community of any importance to build showy public buildings—high schools, city halls, court houses—much of it to indulge civic pride, and we overlook that which should concern us above all else—the community and individual health.

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*Seward.

**Rankin, Am. J. Pub. Health, Jan. 1927.

Iowa some years ago enacted a law providing for county hospitals in counties voting favorably for the projects. Theoretically, this would seem to be a happy solution of the hospitalization problem; but not over a dozen counties have availed themselves of this act in the more than a dozen —perhaps twenty—years since the enactment of the law. This, in itself, shows that the county hospital law does not meet the needs of the community.

A law should be enacted in this and other states, providing for the formation of community hospital districts, and the building and maintenance of hospitals, in manner similar to the laws for the formation of school districts, drainage districts and irrigation districts, and for necessary construction and maintenance.

The hospitals could rank from about 25-bed emergency hospitals on up to whatever the community needs may be.

More and more the need of community hospitals is becoming apparent. The laity expects better results than are in many cases possible in household practice and is willing to avail itself more and more of the hospital. Obstetric and other emergency practice alone would justify the community hospital.

Would that a Daniel Webster or a William Jennings Bryan were to appear to arouse the populace to this greatest of all social needs—the community district hospital!

THE ANNUAL MEETING

The next annual meeting is to be held in Lincoln, May 10, 11, 12 at the new Lincoln Hotel. This building is modern and thoroughly convenient for such purposes. A new room with good acoustics has been provided for the use of conventions, and the general sessions will be held in it. It is large and comfortable.

The program for the meeting is in the process of being made and is far enough along for the writer to feel safe in saying that it will be of high standard. One morning will be given to Dry Clinics, one or two splendid symposiums are being put together, and then, as usual, there will be several guests from other states, who will address the general sessions. The exhibits promise to be up to standard with a Tuberculosis exhibit of high quality added. The committee on arrangements assures us that their part of the entertainment will be as enjoyable as that of previous years.

The meeting is less than two months away. It is time to begin to think of it and lay plans to be present. The writer urges every member to make an effort to attend at least one day to get the inspiration and help make it the biggest meeting in our history.

—R. B. A.

LEGISLATIVE MATTERS

Copy for your Medical Journal goes to the printer on the twentieth of the month preceding date of issue; therefore news about the doings of the legislature and comments thereon must be accepted as at least ten days old.

Senate File No. 61, the Basic Science Bill, passed the Senate March 17, by a vote of 26 to 6, which looks very encouraging; but let no one be deceived into inactivity, for there are 100 members in the house and there is a real fight ahead.

Senate File No. 12, the Compensation Bill, which would be very unfair to doctor and hospital stands a good chance of being defeated as it ought to be.

The bill sponsored by the Welfare Department (file number not at hand), providing for the annual licensing of all professions seems to bid fair to become a law.

THE RECENT CLEVELAND MEETING, COLLEGE OF PHYSICIANS

The American College of Physicians held the eleventh annual clinical session at Cleveland, Ohio, February 21, 1927.

The mornings were devoted to special group clinics and the afternoons consisted of various symposiums held at Hotel Cleveland, the headquarters of the College for this session.

The Cleveland physicians, the Cleveland Academy and all committees are to be congratulated for the successful way in which this meeting was conducted. All clinics and lectures were conducted on schedule time so that no delays or inconvenience was experienced by any member or visitor attending the convention. Courtesy was the slogan of this meeting and I am sure all attending were well repaid for their trip to Cleveland.

The Western Reserve University School of Medicine has a large endowment and is rapidly acquiring a very strong faculty. The Rev. R. E. Vinson is president of the Western Reserve University and surely has the proper ideas necessary to advance his medical department. The College of Medicine gave some excellent demonstrations and of special interest to me were the cardiac demonstrations by Prof. Carl J. Wiggers and his staff. The other morning clinics were varied and every one saw special clinics in their respective specialties of high character.

The afternoon symposiums were on the Diseases of the Heart and Blood Vessels, the Diseases of the Gall Bladder and Liver, and on Pediatrics. The evening sessions were both scientific and entertaining . These consisted of a symposium on Diabetes, the pathology of Nephritis, the treatment of Gastric Ulcer and the Neoplasm Entity of the Leukemeas, Aleukemic Lymphoblastoma, Mycosis Fungoides and Hodgkin's Disease. The smoker was well attended and a most interesting lecture was given by Henry Turner Bailey on the Beauty in Common Things. He took as his text your two hands and by showing their various curves, lines of force and comparing them to all things in nature surely made one have considerable respect for the wonderful viewpoint of the artist.

The College of Physicians is steadily growing and is constantly striving toward higher ideals and the progress of medicine. Committees of the College of Physicians and College of Surgeons are joining hands to elevate and promote higher ideals and standards in medicine.

This organization has long passed its difficult organization period and its influence and help will be greater and greater as its growth develops.

—Adolph Sachs.

THE ADULT BLIND

"Can't you help me, Doctor? Won't I ever see again?" This question must be answered in the negative by the physicians of Nebraska to a considerable number of adults each year. Most of these patients are active men and women with social and business responsibilities, children to educate, obligations to meet, and ambitions to be fulfilled.

"But Doctor, what shall I do? Can't you tell me how I can get a start?" The retraining of the adult blind is one of the vital problems that confronts this and every other state today. The physician, and especially the oculist, is particularly interested, not because his responsibility is greater but too often it is he who must take away the last hope of restored vision and to whom the first appeal for help is made.

The causes of incurable blindness occurring after maturity are numerous. Simple glaucoma probably heads the list. Due to its gradual onset it is often disregarded until it has advanced to the point where its progress can not be arrested. Corneal opacities from whatever cause, atrophy of the optic nerve, retinal degeneration and detachment and plastic anterior uveitis render a certain number sightless each year. Traumatic loss of both eyes or of an only eye is most difficult to deal with as there is no time for gradual readjustment, while blindness from sympathetic ophthalmia is tragic in the extreme, a condition which should never have been allowed to occur.

Some constructive work is being done and much more is possible. Stimulated by the ever repeated appeal, a group of physicians and laymen have been formulating plans for establishing a state-wide program for helping these unfortunates to help themselves. For example, they must be taught "how to be blind," how to dress and undress, how to eat and move about with a fair degree of assurance. They must be taught new social methods and means of recreation. Various lines of employment are open to the blind and each case must be carefully studied with reference to occupational aptitude and ability. If special training is necessary, it should be instituted early before the individual has lost hope for the future and confidence in himself. Arrangements must be made for marketing his products and the public must be kept interested in his efforts to overcome his handicap.

A recent survey shows that out of an adult blind population in Omaha of over a hundred, forty-four are or could be made self-supporting or partly so. Their appeal is not for charity but a chance. An aggressive society for service to the blind has been organized with a well-balanced program for social, educational and productive rehabilitation. Lincoln is working along the same line. The State Department for Vocational Training of the Handicapped is deeply interested and rendering valuable assistance and advice. The Nebraska School for the Education of the Blind through its superintendent is co-operating in every way possible. Every city in the state should be deeply interested and there is scarcely a community but has one or more who would be benefited by such a program.

This movement for retraining the adult blind was started by Nebraska physicians and it is the hope that the physicians of Nebraska will do all in their power to support it and by doing so take "hope and a chance" to the many who a short time ago could see as well as any of us.

—P.

CONSULTANTS.

The second or third physician who attends a patient is too frequently the starting point of a malpractice suit. One doctor finds a case progressing unfavorably and he calls a consultant to aid him. Recovery is not satisfactory, the patient becomes dissatisfied or complains and requests that another doctor be called to the aid of the physician. These doctors are contemporary consultants.

A patient is dismissed from treatment, chooses to discontinue treatment or is referred to some other physician, or another physician is consulted with or without the consent or knowledge of the first physician. This physician is a subsequent consultant.

The contemporary consultant as well as the physician first in charge are subject to action jointly.

A contemporary consultant might call the patient aside and explain what in his opinion the physician first in charge ought to have done and failed to do but that does not often happen.

The consultant can be summoned and compelled to testify to what he saw or what he observed and if so summoned he should tell the truth. He is under no obligation to form or express opinions.

In what particular does the position of the subsequent consultant differ from the contemporary consultant? The subsequent consultant called in, it is his professional duty to render the patient the most skillful services of which he is capable, so also the contemporary consultant. Manifestly the consultant's duty to the patient is identical whether he is consulted contemporaneously or subsequently.

The medical profession appears to assume that the relationship of the subsequent consultant to the doctor previously in charge of the case is different. It is time that some one should ask why? His opinion about what might have been, if what was, had been otherwise, or what might now be, if what is, were not, need never be formulated nor expressed. The suit can not be sustained without opinion testimony and so it is not brought.

—Czar Johnson, Medico-Legal Defense Com.

THE APPEAL OF THE SHORT ARTICLE.

Nothing is truer than the following paragraph from the letter of a correspondent:

"I have found it true in my own experience, and believe it must be true with many others, that we always glance through the Journal the day we receive it and if there is a short illustrated article, apparently bringing out a few salient points, we read it immediately, while the longer and detailed articles we will put aside, thinking that we will read them at a future date when there is more available time. Then, unfortunately, many times we either forget the article or fail to find that time, unless we are particularly interested in that subject."

DOCTOR KEEN VIEWS THE SMALLPOX SITUATION.

Dr. W. W. Keen, Philadelphia, ninety year old dean of American Surgeons, contributed an article "Smallpox, a National Disgrace," to the *Review of Reviews* for February in which he brings out that next to India, the United States has more smallpox than any other country, exceeding that of European and Asiatic Russia; that in the year preceding June 30, 1925, the increase of smallpox was 75 per cent and the increase of deaths 628 per cent over 1923; that among the 4,000,000 American soldiers in the World War, there were but 979 cases of smallpox and but 15 deaths; that Massachusetts with 400,000 more people than California, but with smallpox law enforcement, from 1919 to 1924 had but 126 cases of smallpox against California's 26,651 for the same period. California had repealed the earlier laws enforcing vaccination. He concludes: "The experience of centuries and the common sense of every community should insist on universal vaccination."

"A DOCTOR LOOKS AT DOCTORS."

Dr. Joseph Collins, New York neuropsychiatrist and somewhat sensational magazine writer, in *Harper's Magazine* for February, 1927, in an article "A Doctor Looks at Doctors," pays his respects, without naming them, to some famous specialists he consulted over a period of years for a deep seated affection which handicapped his active career. It is rather easy to name some of the specialists to whom he refers, notably Osler. It is interesting to note the author's estimate of the psychology and thoroughness of each one consulted. The story is probably overdrawn to make it enticing reading; but does throw an interesting, if somewhat disparaging, sidelight on some of the bright lights of medicine of the recent past.

A doctor may be too thoroughly scientific and lack human interest; he may be too cock-sure and thereby delude himself and his patients; he may not be well grounded but can carry conviction to his patients by his pomposity.

He concludes: "It would be a wise thing to devote a part of medical education to the mind of the physician himself, especially as it concerns his patients. For the glories of medical history are the humanized physicians. Science will always fall short; but compassion covereth all."

GROWTH IN CHILDREN WITH DIABETES MELLITUS.

W. S. Ladd, M. D., and Charlotte C. Day, R. N., *Amer. J. Dis. Child.,* December, 1926, give a logical analysis of 35 cases of juvenile diabetes, including many charts and tables, and bibliography.

The group includes 34 cases of diabetes mellitus and one case of possible renal diabetes, in which 23 of the patients were male, and 12 female. The cases range in age from 1½ years through puberty to 20 years. The nationalities represented 14 Americans, 13 Jewish, 2 German and one each of Welsh, Irish, Swedish, Spanish, Dutch and colored.

The treatment included diet and in 5 cases without insulin, 21 cases with insulin, 7 cases partly pre-insulin and insulin, one renal diabetes without treatment and one case on which no data was given.

The authors found difficulty in establishing a normal curve of growth and food requirement standards for normal children as criteria in comparison.

The Bardeen average of weight for a given height roughly correlated to age, was chosen as their criterion for growth. Holt and Fales standards of food requirements for normal children were used for comparison on food requirement. In their group, at the onset of the diabetes, 27 were heavy for their height, 7 were of normal proportions and one was light for his height. They state that in their analysis with the onset of diabetes when insulin is not used in therapy, the growth process slows down or ceases altogether, depending on the severity of the case. This appears to be due to lack of food. To have growth in height continue at a normal rate even in moderate diabetes is exceptional, for growth in height decreases as the disease progresses.

Under insulin the growth in height did not usually begin until the patient had attained normal weight for height, and in some cases not until the patient became heavy for height. "As time goes on and stature increases, these patients tend to assume normal proportions in most instances. This may be the result of control of diet."

They state that the optimum weight for a diabetic child should be the normal average weight for height according to Bardeen's tables, within a normal deviation of plus-minus 12 per cent from the normal curve.

Their patients were usually sugar free during their periods of best growth, with sufficient insulin and a protein ration of 1.5 to 2 grams per kilogram of body weight. The total calories in the diet were 50 to 75 per cent of the Holt Fales standard. They report good growth on .8 gram protein per kilogram body weight. Consequently the optimum amount of food for a given child cannot be fixed, but their cases show that "diabetic children may lead normally active lives and attain average stature and strength on an amount of food, which expressed in total calories, is about 2-3 the Holt and Fales standard of normal requirement."

Their diets varied from time to time but the average proportions were carbohydrates 35 per cent, protein 15 per cent and fat 50 per cent of the total calories. This, they state, is not necessarily the best proportion and, that their experience in the last two years led them to believe that in some cases good results were obtained in approaching more closely Holt and Fales standards of 50 per cent carbohydrates and 35 per cent fat.

—J. Harry Murphy.

ABOUT CERTAIN BOARD OF HEALTH REGULATIONS.

Because many physicians do not fully understand what is expected of them in the matter of reporting for quarantine, contagious diseases, the chief of the Bureau of Health has sent out a circular letter, the gist of which follows:

> Note that the physician is only required to report his reportable cases to the secretary of the board having jurisdiction. In the county that is the county superintendent. In the cities, the secretary is the chief of police, and in the smaller towns, the city marshall. When the physician has so reported, he has done all that the law or rules require. It is no part of the physician's duty to establish and maintain quarantine, that being the duty of the police power of the state. In the county the quarantine officer is the sheriff, and it is his duty to establish and maintain quarantine or placard. The sheriff may delegate this to the attending physician if the physician sees fit to serve, but the physician is not required to act if he does not so desire. In the corporate limits of cities and towns, the physician must report to the chief of police or marshall. When he has done so, he has complied with all the law and regulations required, it being then the duty of the chief of police or marshall to establish and maintain quarantine.
>
> When the minimum time of quarantine is up, and the attending physician is satisfied that the case is safe to release, he should so notify the quarantine officer. Then it is up to the Board to see to the release. But if such Board does not deem it best to issue a release, the attending physician need not

worry or bother himself further in the case, as he has discharged his full duty to his patient, and the responsibility for release rests with the Board.

Uniformity and system in the matter of handling contagious diseases will make for efficiency the same as in any other activities.

THE ONWARD MARCH OF ELECTROTHERAPEUTICS

During the progress of a recent meeting of physicians where some of the newer electric modalities was the principal topic of discussion, a casual observer, who happened to be a physician of rather high repute in the profession remarked, "They look pretty good for a bunch of quacks". While this was said half jestingly, it no doubt reflects the sentiment, at the present time, of the majority of the "recognized" leaders in medicine and surgery.

"Quacks in medicine" — well, yes, we have them. I have had something to say about them in the past and still harbor some very strong convictions in this regard.

There are quacks and quacks and to be the right kind of a quack is no opprobrium. The intelligent, upright, thinking man of tomorrow is usually a quack to the man of today. But were it not for the man of tomorrow, there would be stagnation, for the man of today knows little and seems to care less for anything which has not received the stamp of approval of the High and Mighty who have set themselves up as monuments of the ultimate. They are the millstone around the neck of progress; the tack in the tire of the infinite; the leak in the gas tank of opporunity.

The explorer, the pioneer, the searcher has always had to face the brunt of wild winds and savage foes, barbarous and civilized, and in medicine we find no exception. In fact, from the earliest dawn of medical history this condition has often manifested itself in the most virulent form.

Harvey waited long after his discovery of the blood circulation before he dared announce the results of his achievement. Lister with his aseptic surgery idea was regarded as a joke, as well as many other instances that might be mentioned.

That an intelligent conservatism should be exercised, is all important but when conservatism reaches the point where it curtails individual thought and a thing becomes right just because it is, and anything which isn't is unequivocally charlatan, then it far outsteps its usefulness and should be quietly set aside where it will not obstruct the traffic.

What more can be expected of surgery? A refinement of technic, a perfection of much of the new which had its genesis in the war, better and more intelligent anesthesia, a broader conception of the underlying force combating infection, a deeper knowledge of the relation of individual immunity to the hazards of surgical procedures.

And what of internal medicine? While in the past its achievements have been marvelous, it is just on the threshold of a renaissance, the most remarkable in its history. Only the men of tomorrow with unprejudiced vision and confidence will keep pace. The man of today, the ultraconservative, unless he arouses from his seemingly stupid state of indifference, within a few years will find himself so far behind that he will have to strain his ear to catch the far faint murmur of the whirring propeller of progress, carrying us fearlessly forward into broader fields of usefulness where disease is less and less known.

Let me mention two of the more recently opened doors to medicine through which gratifying and heretofore unheard results are pouring. The remineralization of the body, that is, the stabilizing of the calcium and phosphorous in the tissues, and endocrinology, though still somewhat under the ban, but gradually coming out, one of the biggest steps forward in the last three decades.

Now comes Physiotherapy, the infant in medicine. Old, and yet so new from the standpoint of knowledge concerning its therapeutic effects, that it is almost a rank stranger in the armamentarium of most of our leading men today. Fortunately, however, one by one prejudices are being overcome, clinical results are dispelling doubts and today these newer electrical modalities, grouped under the name of Physiotherapy, are providing the third leg for the stool upon which may rest a safer, saner and more rational form of treatment for human ills.

—R.

EDITORIAL PARAGRAPHS.

The next Clinical Congress of the American College of Surgeons will be held at Detroit, October 3-7, 1927.

Dogs may now be immunized against rabies by a single subcutaneous injection of a canine anti-rabic vaccine.

The reader's attention is called to the ad of the Medical Arts Building, Omaha, and the directory of physicians, surgeons and dentists there located.

Archives of Physical Therapy, X-ray, Radium, Omaha, under the managing editorship of Dr.

A. F. Tyler, Omaha roentgenologist, is one of the outstanding journals in its line.

If the dues of those who were members last year are not paid by April first, their names are dropped from the mailing list of the Nebraska State Medical Journal. A word, etc.

America has a suffering army of nearly half a million cripples according to the International Society for Crippled Children, which held its Sixth Annual Convention at Cincinnati, February 16 and 17.

The Omaha Public Library, extension department, offers a service on Mental Nursing to physicians, hospitals, medical colleges, nurses' registries, and officers of state nursing association in Omaha. This seems like real library service.

From the *Creightonian*, we learn that Dr. James F. McDonald, professor of physiology, and Dr. Victor E. Levine, professor of biological chemistry, Creighton University, College of Medicine, have discovered a third source of uric acid, produced by certain bacteria and which has been designated "bacteriogenous."

A well-known research worker, commenting on an editorial in last month's Journal, said: "If you want to get good dietetics in the hospital, the medical profession and the hospitals must take over the work of the successful training of nurses. Physicians are prescribing diets for gastric ulcer and not for human beings."

We take no particular pride in recording that at present one Nebraska physician is under indictment for committing an abortion resulting in the death of the patient, and another is sued for breach of promise in which seduction and induction of abortion with resultant ill health is alleged, and the estimated damage is placed at $52,000.

Max Thorek, in *Clinical Medicine*, for February, 1927, reports a case of extra-uterine pregnancy developing to term and operated at the end of eleven months. There was placental attachment to the peritoneum of the anterior abdominal wall, and to the fundus uteri. A dead full-term fetus was delivered and the patient made an uneventful recovery.

Jenkins, in *Kentucky State Medical Journal*, January, says:

> "As the matter now stands, if a man gets tired of general practice he takes up surgery. He begins to do all his own surgery, and forthwith he becomes a surgeon. A man who is too lazy or too incompetent to do general practice goes to London or Paris, stays awhile, and finally comes back with a new piece of machinery and elects himself a specialist."

Rather strong, yet not without some truth.

As if the narcotic license and the license to prescribe liquor were not enough, another annoyance is to be thrust upon us; an annual registration with a registration fee. The legislature has this under consideration, the Department of Public Welfare endorses it and our own respected Legislative Committee has approved the bill.

The advertising patronage of this Journal is picking up, thank you. We have thirty-two pages this month. New advertisers are Young Typewriter Co., and Paul E. Johnson, Inc. In addition, the Betz and Abbott ads are back this month and the Victor X-ray Co. has taken additional space. Patronize our advertisers, for they make your Journal possible.

Dr. J. C. Bloodgood, of Johns Hokins, in a paper before the Southern Medical Association and in a letter to medical journals advocates tissue diagnosis in the operating room and immediate cover-slip examinations of all fluids and pus. The danger of contamination of the blood stream by specimens taken for diagnosis must be reduced to a minimum by immediate diagnosis and immediate complete removal of the affected area. He suggests that:

> "Schools for technicians may have to be established in different sections of the country, and the surgical pathological laboratories of the medical schools and the larger surgical clinics should offer courses in this tissue diagnosis, so that surgeons may learn to become their own pathologists, or pathologists learn the particular needs of the surgeon in tissue diagnosis in the operating room."

WOMAN'S AUXILIARY OF THE STATE MEDICAL ASSOCIATION.

The next annual session of the Woman's Auxiliary of the Nebraska State Medical Association will be held in Lincoln, Tuesday, Wednesday and Thursday, May 10, 11 and 12. Plans are already under way for entertaining the auxiliary. There will be a tea on Tuesday afternoon, the annual luncheon and business meeting on Wednesday, and a visit to the new state capitol on Thursday. Arrangements are incomplete at this early date, but a profitable program is assured and a large attendance is anticipated by our state officers.

Volume 1, Number 1 of the Bulletin of the Woman's Auxiliary of the A. M. A. has been received by our state president, Mrs. Rubendall. It is to be issued quarterly as a means of carrying the aims and purposes of the auxiliary throughout the country. The first number contains articles and timely discussions on phases of the work, information as to what is being done by national and state organizations, and a directory of all officers. Its statistics of membership in state medical associations with comparisons of the size of corresponding woman's auxiliaries shows Nebraska well up on the honor roll, with a membership in the woman's auxiliary totaling 20% of the enrollment of doctors in the Nebraska State Medical Association. Texas, the mother of auxiliaries, shows only four per cent higher than Nebraska, and Pennsylvania with its 100 per cent county organization of women is two per cent lower. The Bulletin promises to fulfill the prediction made for it "that it will be a means of spreading the gospel of service among doctors' wives, and will become a magazine which every member of all the auxiliaries in the U. S. will be proud to own."

The next annual session of the Woman's Auxiliary of the A. M. A. will be held in Washington, D. C., May 16 to 20, 1927.

—Mrs. A. P. Overgaard, Publicity Chariman.

WESTERN PHYSIOTHERAPY ASSOCIATION

The ninth annual session of the above association will be held at the Hotel President, Kansas City, Mo., April 8 and 9, under the presidency of Dr. Lynne B. Greene. Twenty-nine names of men well known as specialists in physiotherapy appear on the preliminary program as essayists and lecturers at the meeting. Physiotherapy has become a recognized specialty and is calling forth an increasing interest from the profession of medicine. All medical men are cordially invited.

—Chas. Wood Fassett, Sec.

MEDICAL SOCIETY OF THE MISSOURI VALLEY.

The fortieth anniversary of the Medical Society of the Missouri Valley will be celebrated in Des Moines, Iowa, September 14, 15 and 16, and a banner meeting is expected. The program committee is at work assembling papers. The major portion of the essayists will be drawn from the Universities of the Missouri Valley states. The arrangements under the direction of Dr. Granville Ryan are progressing rapidly and a splendid entertainment is being prepared. Hotel Fort Des Moines will be headquarters, and the sessions will be held in the New Shrine Auditorium, with the exhibits on the lower floor. The officers of the society are as follows:

President, T. G. Orr, M. D., Kansas City, Mo.

First Vice President, Fred Moore, M. D., Des Moines, Iowa.

Second Vice President, J. M. Patton, M. D., Omaha, Neb.

Treasurer, O. C. Gebhart, M. D., St. Joseph, Mo.

Secretary, Chas. Wood Fassett, M. D., Kansas City, Mo.

The executive committee having the program in charge consist of the following members:

Donald Macrae, M. D., Council Bluffs.
J. M. Mayhew, M. D., Lincoln.
Granville Ryan, M. D., Des Moines.
J. E. Summers, M. D., Omaha.
P. T. Bohan, M. D., Kansas City.
A. D. Dunn, M. D., Omaha.
T. G. Orr, M. D., Kansas City (ex officio).

At this the fortieth anniversary there will be a complete reorganization of the Society. An effort will be made to present at future meetings the newest research and clinical investigations developed in the Valley. In addition several clinicians and scientists of note will be on each program.

THE SOCIETIES.

The meeting of the **Omaha-Douglas County Medical Society,** Tuesday, March 8, 1927, was called to order by President Conlin.

The secretary was instructed to cast a unanimous ballot admitting to membership in the society Drs. Emil C. Peterson, Mason E. Lathrop, E. Joseph Kirk and A. O. Scoins.

Dr. Roy Fouts reported as follows on the result of their work with the Bee in regard to fraudulent medical advertising.

'Mr. Chairman and Members: We have done considerable work—that is we have tried to—how much we have accomplished I don't know. Perhaps you have noticed there has been a noticeable reduction in the size of the I-on-i-co ad appearing from time to time. The Omaha Bee is taking cognizance of the Society's protest. About three o'clock this afternoon they called me and asked me to come to the office, said they understood the medical society was going to have this discussion and hoped no measure would be passed. He assured me that the policy of the Bee in regard to this medical advertising was going to be changed. Just how much I don't know. We had expected to see more change than a reduction in size, but it has changed somewhat.

I have here a list of all the advertising appearing in the different papers in the city. It contains some revelations if you haven't looked it over.

As to what our attitude toward the Bee should be I don't presume to say, further than I will say that they appear to want to be fair but don't know how. However, we must realize there are two sides to this story. He said when they started out to print articles written and signed by physicians sometime back they were besieged by Chiropractors, Osteopaths, Christian Science practitioners and so on with reference to printing medical stuff as news.

I believe if we are patient and bear with them a little bit we can help them. One thing sure we can't drive them. We can't drive a paper the size of the Omaha Bee and we can't drive Mr. Updike but we may be able to persuade them, and the medical profession might well look out if the newspaper wanted to turn against them."

The secretary read a brief biography of Dr. Joseph M. Aikin, whose picture was donated to the Society and placed in our gallery of pioneer physicians.

Dr. Alfred Schalek then presented the speaker of the evening.

We were honored to have Dr. Richard L. Sutton, dermatologist from Kansas City, address our Society on the subject "Skin Cancer." Over 200 members enthusiastically received his address, which was liberally illustrated with lantern slides of the various types of skin cancer. There was such a demand for his pictures of his hunting trip in Indo-China that he kindly consented after the scientific program to give his experiences during this hunting trip. All members felt highly repaid in hearing Dr. Sutton, a very unusual and entertaining man.

On March 10, 1927, there was a special meeting of the **Omaha-Douglas County Medical,** at which time we were fortunate enough to have Dr. Jabez Jackson, President of the American Medical Association, who spoke to us on the "Appendix Problem." Over 300 doctors, dentists and medical students attended this lecture. Dr. Jackson was primarily the guest of Phi Beta Pi Medical Fraternity, being their principal speaker at a Founders Day banquet. He was also the honored guest at a Public Affairs luncheon of the Chamber of Commerce that noon speaking to the business men and women of Omaha on the subject of "Business and Health." He called the attention of the business people to the fact that they should support all bond issues for the upkeep and development of city and county hospitals and encourage the endowment of private institutions so that the person of average income could be given care in one of the other of these hospitals. He brought out the fact that the daily expense of a patient in a hospital was from $4 to $6 a day, and a good many of these patients could not afford to pay that much.

Before the lecture at the Medical Arts Auditorium, Dr. J. W. Duncan reviewed the work of the Legislative Committee.

Doctor K. S. J. Hohlen, of Lincoln, was also present and told what was being done by the campaign committee at Lincoln.

Doctor B. W. Christie moved that the Society by a vote express their confidence in the Committee on Public Affairs, and allow this committee to adopt

such measures as they saw fit, to take care of pending legislation. The motion was carried unanimously.
—Earl C. Sage, Sec'y-Treas.

The Madison County Medical Society meeting February 22 was held at the Hotel Norfolk following a dinner to about forty doctors and their wives. The ladies remained for the program which was a paper on "Disturbances of the Thyroid", by Dr. Clayton S. Andrews, Lincoln. The paper was discussed by Dr. George W. Covey, Lincoln, and by Dr. S. A. Campbell, Norfolk. Mrs. Andrews and Mrs. Covey accompanied their husbands to Norfolk.

The Buffalo County Medical Society, February 24, at Kearney, elected Dr. J. A. Bueford, superintendent of the state hospital for the tubercular, president; Dr. Sophia Warner, secretary. The society went on record in favor of the Basic Science Bill and appointed a legislative committee.

The Merrick County Medical Society, February 5, at Central City elected Dr. C. C. Paxton, Palmer, president, and Dr. H. E. Glatfelder, vice president. Dr. George W. Covey, Lincoln, and Dr. George Burns (dentist) Lincoln, and Dr. J. M. Willis, McCook, read interesting papers.

The Otoe County Medical Society meeting, February 16, was held at the new St. Mary's hospital and partook somewhat of the nature of a jubilation over the acquisition of a hospital that will mean so much to the county medical society. Dr. C. A. Roeder, Omaha, congratulated the profession and the city on this humanitarian enterprise. Dr. Roeder and his assistant Dr. Killins gave a paper on "Clinical Classification of Goiters;" Dr. Frank Conlin, Omaha, spoke on "Complications of Diabetes;" Dr. R. W. Fouts, Omaha, spoke on "Uses of Dye in Roentgenology of the Gallbladder.' Dr. J. W. Duncan, Omaha, entered into the discussions of the several papers. Refreshments were served after the meeting by the Sisters of St. Francis.

HUMAN INTEREST TALES.

Dr. D. M. Sirco, formerly of Omaha, has located at Plattsmouth.

Dr. and Mrs. R. D. Martin, Hastings, have returned from Vienna.

Dr. C. W. Weeks, Ord, did postgraduate work in Chicago during March.

The Wise Memorial hospital has been remodeled at an expense of $50,000.

Dr. James Kelley, Nemaha, is reported critically ill at the Auburn hospital.

Dr. W. J. Arrasmith, Grand Island, spent some time recently at the Mayo clinic.

Dr. S. R. Towne, veteran Omaha physician, has been reported very ill recently.

Dr. O. E. Liston, Elmwood, underwent an operation in an Omaha hospital recently.

Dr. V. L. Siman, Winside, has gone to New York for an extended postgraduate course in surgery.

Dr. L. Y. Bilin, for a short time connected with the York clinic has gone to Los Angeles to locate.

Dr. J. C. England, formerly of Chicago, has located at Alma to do the x-ray work at the Alma hospital.

Dr. C. E. Sayre, Norfolk, made a trip to points in Wisconsin and to Chicago the latter part of February.

Dr. M. G. Wohl, Omaha, addressed the Pottawattamie Medical Society, February 17, on "Blood Transfusion".

Early in March the St. Lawrence, S. D., Chamber of Commerce, reported an opening for a doctor, young doctor preferred.

The Pawnee hospital has acquired by gift a building adjoining the hospital and it will be used for a maternity annex.

Dr. Charles Lieber, Waukegan, Illinois, physician, has taken possession of a farm north of Sidney, Nebr., for needed recreation.

Dr. Shelby W. Wishart, erstwhile Chadron boy, is now connected with Dr. James Y. Welbourn, Walker Hospital, Evansville, Ind.

Col. George H. Skinner, formerly of Camp Lewis, Washington, has been transferred to Fort Omaha, as surgeon of the seventh corps area.

Dr. C. E. Palmer, for a number of years in practice at David City, has located at Ontario, Oregon, where he has become associated with a group.

Dr. and Mrs. D. T. Martyn, Sr., Columbus, celebrated their golden wedding anniversary recently. Dr. Martyn began practice at Clarks, Nebr., in 1871.

Dr. W. A. Killins has become associated with Dr. C. A. Roeder, Omaha. Dr. Killins has recently come from the Mayo clinic after a four year fellowship.

Dr. Jabez N. Jackson, president-elect of the A. M. A., spoke before the Omaha-Douglas County Medical society and the Phi Beta Pi medical fraternity, March 10.

It is reported that Dr. James McDonald, professor of physiology at the Creighton University College of Medicine, is about to publish a monograph on "Mechanism of Pain Reference".

Dr. Frank Murphy, assistant city physician of Omaha, in charge of emergency work, developed a severe case of diphtheria 14 days after his last known contact with a diphtheria case.

Dr. B. F. Williams, Lincoln, was the guest of Dr. Franklin Ebaugh, director of psychiatry of the University of Colorado during the week of clinics on nervous and mental diseases.

Confusion of light scarlet fever and so-called German measles is reported from several sections of the state. It appears to be hard to differentiate the particular form prevailing this season.

The Lutheran Hospital association has taken a lease on the old Presbyterian hospital on South Tenth street, Omaha, and will conduct a hospital with Dr. F. Rosenblatt, chief of medical staff and W. H. Betz, chief surgeon.

In the opinion of a Kimball county farmer, a Kimball surgeon owes him about $19,169 because the results of treatment of a double fracture near the ankle, caused by the kick of a cow, is a disappointment to him.

The Adams County Medical association tendered a banquet to Dr. J. V. Beghtol, in honor of the fiftieth anniversary of his practice of medicine. The honored doctor was the first president of the first board of health of Nebraska.

Dr. B. F. Lorance, Auburn, has published a book entitled "Religious Instruction in the Public Schools". His dominating thought is said to be that the teaching of moral character does not necessitate the use of the scriptures in the schools.

The Faculty Woman's Club of the University of Nebraska College of Medicine at the Washington's Birthday dinner, an annual event, this year honored Mrs. A. F. Jonas, vice president of tht Woman's Auxiliary of the American Medical Association and Mrs. Clarence Rubendall, president of the Woman's Auxiliary, Nebraska State Medical Association.

NECROLOGY

Joseph M. Grace, Omaha; Creighton University, College of Medicine, 1924; recent interne, St. Joseph's hospital, Omaha; died on the Balearic Islands, following an illness contracted at sea enroute to the United Tubercular sanitarium, at Bagalore, India, to which he had been assigned; aged about 27 years.

Robert S. Anglin, Omaha; Queen's University, Ontario, 1882; nose and throat surgeon, practitioner of Omaha for many years; died at Tekeo, Washington, January 19, of carcinoma of the throat.

Annual Meeting, Lincoln Hotel, Lincoln, May 10-12

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A CONSIDERATION OF THE DISEASES OF THE THYROID GLAND.*

CLAYTON ANDREWS, M. D., F. A. C. S.
Lincoln, Nebraska.

A perusal of the present-day literature on diseases of the thyroid gland, with the numerous classifications that are presented, impresses one with the necessity of a simple classification that will eliminate many of the confused ideas relative to the various types of goiter. It shall be my purpose to bring to you a simple, satisfactory, logical, working classification of these diseases, and to attempt to clarify their diagnosis and treatment. Insofar as treatment, and, in fact, most other considerations, is concerned thyroid diseases can easily and simply be divided into six groups: (1) colloid goiter; (2) adenomatous goiter; (3) exophthalmic goiter; (4) malignant goiter; (5) inflammations, and (6) myxedema. All other types are either subdivisions or variations of one of these.

TYPE I—COLLOID GOITER

This is the type of goiter commonly referred to as "adolescent," "sporadic," "endemic," "physiologic," "epidemic," or "simple." It is definitely a goiter of youth, probably never seen in persons over 30 to 35, is most common between the ages of 12 and 25, and often disappears by the time the latter age is attained. It is far more common in young girls than in boys and presents itself as a uniform, symmetrical, smooth swelling of the neck, occasionally accompanied by thrills and bruits due to irregular compression of the blood vessels by the excess of colloid. Not infrequently there are associated nervous symptoms and tachycardia that render the differentiation of exophthalmic goiter difficult. The basal metabolic rate is, however, normal or slightly lower than normal, never increased; thus the colloid goiters may be, with great certainty, distinguished from exophthalmic goiters.

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*From the Department of Surgery, Lincoln General Hospital. Read before the Third Councilor District Medical Society, Falls City, Neb., Nov. 26, 1926.

Clinically, colloid goiter is recognized by the symmetrical enlargement of both lobes and the isthmus, and by the characteristic soft granular feel it imparts to the examining fingers. In many instances it produces no symptoms except slight nervousness or worry over the fact that it exists. Microscopically it differs from the normal gland in that the acini are dilated and filled with colloidal material, while the epithelium lining the acini is low and flat in appearance.

Iodine has long been the standard remedy in the treatment of diffuse colloid goiter—this may be given in the form of Lugol's solution, Thyroxin (5 to 10 mg. intravenously), or dessicated thyroid orally, (5 to 10 grs.) The metabolic rate should be known before treatment is undertaken, and the dosage of the drug used, should be varied from time to time, commensurated with the checkup metabolic rates. Dessicated thyroid has been found to be the most satisfactory method of treatment, and the results are usually gratifying, though there are a certain number that will not yield to treatment. Few cases of this type require operation: those that do are usually found to be complicated by adenomas. If operation is necessary in a colloid goiter it is usually wise to delay it until after the patient's twenty-fifth or thirtieth year.

As we all know, this type of goiter can be largely prevented by small doses of iodine given during early childhood and adolescence.

GROUP II—ADENOMATOUS GOITER

This type of goiter is the most common. It is produced by a growth of encapsulated adenomas within the substance of the thyroid gland. The growth probably begins in early life, and may increase slowly or rapidly. In the early stages there are no symptoms unless the tumors develop in such a position as to press on the trachea, larynx, or recurrent laryngeal nerve. Degenerative changes are prone to occur, and consist usually of cystic, hemorrhagic, or calcareous changes. At times one sees evidence of decreased secretory activity in these glands, as evidenced by a lowered basal metabolic rate.

Plummer states that 23% of his cases of adenomatous goiter, showing hyperthyroidism at the time they presented themselves for examination, but that the hyperthyroidism had not been manifest until the goiter had been present for an average of 16 years. This condition produces a clinical picture distinctly different from that of exophthalmic goiter, although the two conditions are often confused.

Toxic symptoms are seldom seen in adenomatous goiters before the age of thirty. When toxic symptoms develop the metabolic rate is increased, but not as greatly as in cases of exophthalmic goiters. In the adenomatous group it is the cardiovascular system that suffers most, while in the true toxic goiter it is the nervous system that is most damaged. Too often the condition is unrecognized until symptoms of myocardial degeneration occur, and the patient suffers from palpitation, arrhythmia, and later, dysponea and edema. Unless myocardial changes are very marked, there is usually an associated increased blood pressure. Other symptoms such as tremor, flushed moist skin, tachycardia, and loss of weight and strength are present.

Clinically adenomatous goiter is recognized by the irregular growth which it produces; the enlargement is asymmetrical, and single or multiple tumors are felt on palpation, which may be cystic, soft, hard, or even stony, according to the degenerative changes that have occurred.

Adenomatous goiters are, in the majority of instances, best treated by surgical measures, but certain factors should be borne in mind. Since we know that toxicity does not develop in these goiters at the time of the appearance of the adenomas, and that the thyroid at that particular time of life is very essential, it seems best to defer operation in young persons. Hence it is good judgment to put off operation until after the age of 25 to 30, unless there is such increase in size as to cause much deformity or pressure. With the patient in good condition, operation at this age can be done with a very small risk and with happy results, and before visceral changes have occurred. If the patient is in a state of broken compensation, with a dilated heart, auricular fibrillation, and edema, it is folly to operate at this time. Rest in bed, forced fluids, and large doses of digitalis over a considerable period of time, will often re-establish compensation and permit of operation with a greatly decreased risk. Under no circumstances, should adenomatous cases, receive iodine in any form.

GROUP III—EXOPHTHALMIC GOITER

This is a constitutional disease apparently due to excessive and probably abnormal secretion of an enlarged thyroid gland, which shows on pathological examination, diffuse parenchymatous hypertrophy. It may occur at any age, but is most common in the third and fourth decades is more common in women than in men, in variously reported ratios of from 4.5 to 1 to 8 to 1; in many instances develops suddenly, with a rapid increase in symptoms, while in other cases the onset is insidious, with no severe symptoms until the second six months of the disease, at which time the patient often passes through a period of severe toxemia, in which all the classical symptoms of exophthalmic goiter are present, and which is termed a thyroid crisis. These symptoms are well recognized as nervousness, tachycardia, tremor, flushed moist skin, loss of weight and strength, excessive appetite and a tendency to gastro-intestinal crisis of vomiting and diarrhoea. These symptoms may appear, even before an enlargement of the thyroid gland is noticeable.

After passing through a crisis, the patient usually improves considerably, as far as symptoms are concerned, but in the majority of instances there is a recurrence within the next few months or years. If proper treatment is not instituted, the patient becomes a chronic invalid as a result of degenerative changes in the heart, kidneys, liver, and other vital organs.

In most of these cases the enlargement is symmetrical, firm, smooth and frequently quite hard. There may be practically no perceptible increase in size, or the gland may be five or six times the normal size. There is a marked increase in the vascularity of the gland, and in a large majority of cases, bruits can be heard over the vessels. Marked bilateral exophthalmos is conclusive evidence of the existence of exophthalmic goiter.

Plummer shows the average basal metabolic rate of exophthalmic goiter, at the time they come under observation, to be 57 per cent above normal; in adenomas with hyperthyroidism 39 per cent above normal. The metabolic rate is a great aid in diagnosis, in the early stages especially; it is a definite index, at the time it is taken, of the amount of hyperthyroidism but it gives no indication of the amount of damage that has previously been done, and can, therefore, be used only as an aid in deciding the type of treatment for any given patient. There is a marked variation in the clinical pictures of patients having the same rate, and some develop a tolerance to an increased metabolism; for example one patient with a rate of plus 50 may be in a crisis and extremely ill and hence a poor surgical risk while another with the same rate may be in very good condition and be a fair surgical risk.

No one type of treatment can be relied upon to secure the highest percentage of cures in exophthalmic goiters. The choice must be made after studying each individual patient. Undoubtedly, surgery in the majority of cases, offers the best possible chance for permanent cure, but only about 30 per cent of the cases are in condition to stand primary thyroidectomy. Preliminary preparation is essential in most cases. In another 20 per cent the wisdom of performing a thyroidectomy is doubtful and preliminary ligation is done as a test of the patient's tolerance. The remainder fall into a group that are definitely poor risks and require prolonged periods of rest and other non-surgical procedures as preparatory to ligations and finally thyroidectomy.

The use of iodine in the preparation of these cases has been one of the greatest advancements in the treatment of exophthalmic goiter. The results of its use are often equal to that of a ligation and it has, in fact, largely obviated the necessity for ligations. Lugol's solution should be used in the preparation of almost, if not all, exophthalmic goiters, usually in doses of ten drops three times daily, for 7 to 10 days prior to operation, and again for 7 to 10 days after thyroidectomy. The maximal doses are given to patients in a crisis or intensely stimulated; the dosage in such cases being 60 to 100 minims daily until the crisis has subsided, then 10 minims three times daily for 10 to 20 days longer, depending upon the reaction.

The clinical effect in these cases is striking; an early change is shown by loss of the severe nervous tension and the ability to sleep; in a few days the pulse and metabolic rates will usually drop 30 to 50 points each, and soon there is noted an appreciable gain in weight and strength. It has been shown by Boothby that after the marked initial improvement due to the iodine the condition of the patient becomes relatively stable and no further improvement occurs. Repeated observations on the effect of iodine administered continuously for a year or longer have confirmed this, so there is no rational basis for giving iodine in cases of exophthalmic goiter with the expectation of curing the disease. Not only has iodine greatly reduced the mortality and increased the operability in these cases, but it has greatly reduced the number of multiple operations, shortened greatly the convalescent period, and to a great extent has eliminated the dreaded post-operative reactions. Incidentally it is of interest to note that it has reduced the operative mortality in exophthalmic goiter to about 0.8 per cent. while that of adenomatous goiter with hyperthyroidism is still between 3 and 4 per cent. This is due to the lack of any satisfactory preoperative preparation at our command for adenomatous goiters since these cases do not respond to idoine.

Roentgen ray treatment is occasionally beneficial in a certain percentage of patients, but the results are usually but temporary, and not curative, and it finds its greatest field in preparing poor surgical risks for operation, or as a palliative measure in inoperable cases.

Resection of both lobes of the thyroid and removal of the isthmus, preserving gland tissue on each side equivalent to one-third to one-fourth of a normal lobe, undoubtedly offers the patient the best chance of cure. In no other operation are skill and technic of more importance, since hemorrhage, infection, or obstructive dysponea incident to injury to the recurrent laryngeal nerve, may prove the deciding factor in the ultimate result. Local anaesthesia alone, or combined with ethylene or gas-oxygen is the anaesthetic of choice. The most reliable figures obtainable show a 70 per cent cure after this procedure, and a great majority of the remaining 30 per cent who are not cured are greatly benefited.

GROUP IV—MALIGNANT GOITER

The frequency of malignancy of the thyroid can only be estimated, but the consensus of opinion seems to be that it occurs in less than one-half of 1 per cent of all goiters. Over 80 per cent appear after the age of 40 years, and with the rarest exception, if ever otherwise, appear in persons carrying pre-existing goiter.

The clinical diagnosis of malignancy of the thyroid is relatively simple when the process is advanced but almost impossible when the malignancy is in the early stage. It must always be considered when a history is obtained of rapid growth of a goiter that has previously been more or less stationary in size, and especially if there be associated pain. In well developed cases the board-like resistance and the fixity of the gland are sufficient to justify the diagnosis, if the history and Wassermann test have excluded the rarer conditions of hemorrhage, acute thyroiditis, and lues. Moreover, when the disease is recognizable by palpation symptoms and signs of pressure, either tracheal or esophageal, are usually present. In nearly one-half of the cases, the diagnosis is not made before operation or the subsequent pathological examination. Metastasis is most often seen in the lungs, skull and liver.

The best results in cancer of the thyroid are obtained in those cases where the diagnosis is made at the time of operation, for the obvious reason that they are the early cases. The results of operation in these cases is about as follows: The mortality is approximately 6 per cent; about 65 per cent die within a few months from recurrence, and 35 per cent will be free from evidence of recurrence in from one to five years. All these cases are given x-ray treatment after operation, and are told to report every month or two for re-examination, and more x-ray if indicated. Involvement of the cervical glands is often taken as an indication that the growth is inoperable; however, this is not always true, for many good results have been obtained in such cases, by thyroidectomy and block dissection of the cervical glands, followed by intensive x-ray treatment.

GROUP V—INFLAMMATIONS

Thyroiditis is a comparatively rare condition which may present a very interesting picture. The onset is usually gradual and is the result of invasion of the thyroid gland by some infectious organism. Acute and chronic forms are seen and are often secondary to some demonstrable throat infection. Thyroiditis may be characterized by tenderness, swelling, pain and fever, or it may be so mild as to pass unnoticed by the patient. It is often impossible to diagnose the low grade forms from malignancy. In other forms there are increased metabolic rate and symptoms that so closely resemble exophthalmic goiter, that the diagnosis can be made only upon microscopic examination. Tuberculosis occurs, but presents no distinctive symptoms that will differentiate it from other chronic inflammations. Syphilis of the gland is also rare, but may appear as a manifestation of a generalized infection. In the second stage of the disease, these may be moderate, painless enlargement of the gland, with a firmness that resembles carcinoma. Gummas of the thyroid may appear in tertiary syphilis.

In the chronic types where the diagnosis is reasonably certain, they are best let alone, for it is difficult to decide what gland tissue it is most advisable to save. Furthermore, normal thyroid function is more apt to follow conservative treatment than thyroidectomy. However, if the infection is diffuse, and continues over a prolonged period of time, the gland will be destroyed and myxedema will result. The luetic type is treated by the usual anti-syphilitic measures.

GROUP VI—MYXEDEMA

Hypothyroid states are the result, either of an inadequate amount of thyroid tissue or of a functional disability of the gland. It results from thyroiditis of long standing, total thyroidectomy, or an infection following thyroidectomy, which destroys the remaining thyroid tissue. Also, there are certain idiopathic cases of myxedema in which the factors causing the thyroid to atrophy and cease functioning, are not known. Certain cases have been reported that were apparently due to the employment of roentgen ray exposures in treatment of lesions of the thyroid.

Myxedema is not as uncommon as we may sometimes imagine. It is characterized by a markedly decreased basal metabolic rate, a myxedematous condition of the tissues, most noticeable about the eyes and face, a slowed and impaired mental state, thick slow speech, dry skin and hair, and the typical facial expression. It is more common in women than in men in the ratio of 5 or 6 to 1, and usually appears between the ages of 30 to 60 years. It is now rarely seen postoperatively, except where there has been a severe secondary infection that has destroyed the remaining thyroid tissue.

The treatment of myxedema produces one of the most brilliant and satisfactory results in the entire field of medicine. All of the changes that have taken place in the skin, hair, and nails, as well as the facial expression and mental condition return to normal in a very short time after treatment is instituted. Thyroid gland is best given in the form of dessicated tablets, the dosage being determined by the metabolic rate and the condition of the patient. Thyroxin is given, either by mouth or hypodermically, under close observation and its dosage regulated by the methods enumerated above. It is estimated that there are approximately 13 mg. of thyroxin in the tissues of a normal person, and that each milligram of thyroxin given intravenously increases the metabolic rate 2.8 points. The thyroxin molecule contains 65 per cent iodine. The myxedematous changes having disappeared, it is of course, necessary to continue the thyroid extract or thyroxin, in sufficient doses to maintain the cure, as it must be remembered that the thyroid is still functionless. This treatment is as brilliant in cretinism as in myxedema, restoring the intellect, removing the hideous deformities, and increasing the height. The earlier the treatment is begun the more prompt and marked is its effect. It is useless if the child is many years old before treatment is commenced. As in myxedema, the treatment must be continued through life. Transplants of the thyroid glands of sheep have given spectacular results, but it has been found that the results are only temporary, as the transplants are eventually absorbed.

—627 Security Mutual Building.

FRACTURE, ACETABULUM WITH PYEMIA: CASE REPORT*

(From Department, General and Orthopedic Surgery University of Nebraska.)

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J. S., boy of 11 years, admitted to University Hospital, Jan. 4, 1927, service of Drs. Jonas and Roeder.

Entrance Complaint: Pain in lower left abdomen.

Present Illness: On Dec. 21, 1926, two weeks previous to admission, the patient fell from a sled while coasting. Struck region of left hip. Slightly injured but continued to play. He was practically symptom free until December 28th, one week after injury, when he developed headache and malaise. This was attributed to over-eating. He vomited that night and next day felt better. December 30th, nine days after injury, he first noted pain in the left lower quadrant which was made worse by activity. Two days later he was forced to stay in bed because of pain localized to the left iliac region. When a doctor was called, he found the boy had a high temperature and sent him to the hospital on January 4th.

On admission, the boy looked acutely ill. His temperature was 103 degrees and pulse 116. Examination was negative until the abdomen was reached. Here both recti were rigid. Tenderness was localized to the left lower quadrant and along the inguinal canal. The left testicle was undescended. There was slight tenderness over the left kidney region. There were no palpable masses.

Rectal examination revealed marked tenderness in the left obturator region.

Extremities: Left thigh sharply flexed. Rotations not painful. Attempted extension of thigh produced extreme pain in the left iliac region. Pressure over trochanter did not increase pain. There was some diffuse tenderness over the lateral aspect of the upper thigh. No infected abrasions were found about the foot or leg.

Laboratory Findings: W. B. C. 23,200, 90% polys. Hb 90% and R. B. C. 5,000,000. Urine negative except an occasional R. B. C.

X-ray Examination: Both Hips: No bone pathology. Slight haziness in left hip joint space. (Fig. I).

Pre-operative diagnosis rested between:

1. An acute abdomen.
2. Retroperitoneal adenitis.
3. Suppurative arthritis of hip.
4. Osteomyelitis of the ilium.

Exploratory Operation: Jan. 5, Dr. C. A. Roeder.

Left McBurney incision—peritoneal cavity not opened. Retro-peritoneal abscess found in region of obturator foramen. One ounce of thin, dirty, cream colored, odorless pus obtained. Culture of this showed staphylococcus aureus and a few colonies of hemolytic streptococcus. The wound was drained. Unable to determine origin of pus.

The patient continued to run a septic course. Temperature up to 104.2 degrees. Blood culture taken January 7, two days after operation was positive for staphylococcus aureus. On January 10th, he developed a painful, swollen ankle, and a small tender nodule in the right forearm.

Drainage Operation: Jan. 11. Dr. H. F. Johnson. Under general anesthesia a dependent drainage was instituted in the left hip region by a counter incision, posteriorly over the crest of the ilium. This was made to communicate with the retro-peritoneal abscess along the inner surface of the ilium. A cigarette drain was inserted into the obturator region and a split tube through and through, resting on the medial surface of the ilium. The right ankle was drained by multiple incisions and pus was found which was extra-articular. A Buck's extension with

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*Read at the Omaha-Douglas County Medical Society Meeting, February 8, 1927.

12 pounds of weight was applied to the left lower extremity.

The evening following operation the pulse was 120 and he was quite comfortable. At midnight there was a rather extensive hemorrhage from the wound in the left iliac region. This was controlled by compression. He was pulseless at this time but revived with stimulation and transfusion of 400 cc. of blood and 250 cc. of normal salt. His pulse remained about 160 for the next 12 hours and the temperature 105.

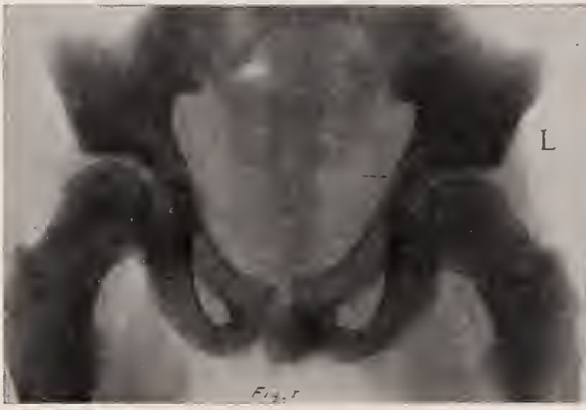

Fig. I. X-ray film taken on admission. Separation of epiphysis between pubis and ilium, not obvious in this view.

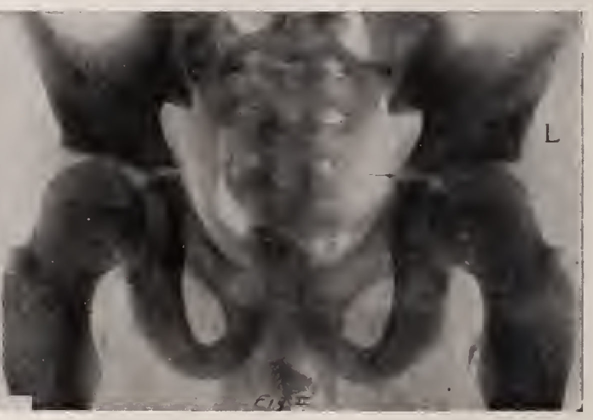

Fig. II. X-ray taken post mortem. Definite widening of the epiphysis on the left side. In the gross specimen this separation was about three-sixteenths of an inch.

The following afternoon another transfusion of 500 cc. of blood was given with improvement. He had received 900 cc. of blood within 24 hours. The same evening, January 12th, following a recurrence of the bleeding from the wound at the hip, he died.

Post Mortem Findings: Dr. A. J. Miller. Suppuration of the left hip joint with fracture of acetabulum through epiphyseal line joining os publis and ilium. (Fig. II). Intra pelvic abscess in retro-peritoneal space. Multiple abscesses in lungs and bladder wall. Large abscess in suprasternal notch and region of right ankle. Injection of iliac vessels failed to reveal evidence of erosion of any large vessel or branch. Hemorrhage apparently a generalized ooze from the obturator region as a part of the hemolytic streptococcic infection.

Resume: Injury to left hip region; evidently direct blow on great trochanter. Fracture acetabulum through epiphyseal line, i. e., separation of epiphysis. Suppurative arthritis of hip developed at a point of lowered resistance. Perforation of intra-articular abscess through acetabulum into retro-peritoneal space. Generalized infection with metastaic abscesses.

ANEMIAS IN CHILDHOOD*

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I wish to give you a short review on the anemias, occurring during childhood.

Not every pale looking child is anemic. A quick determination of hemoglobin will very often reveal normal hemoglobin percentage. If hemoglobin is quite low, a complete blood study should follow. This should be done in order to rule out pernicious-anemia, leucemias, and other rare blood conditions. In most cases, one is able to rule out anemia by means of clinical examination. Looking over the lips, the visible mucous membranes, the ears, and the inside of the hands, we will find they are red, rosy, and well injected. The general paleness in such cases is only the expression of a labile vasomotoric system and partially due to a general neurotic condition—neuropathy.

The medical advise for such not true anemic children should be in the first place: Proper education, good habits and right hygiene. Wrong diet should be corrected and poor appetite improved by giving appetizing foods. Very often a general tonic and especially a prescription containing arsenic and iron should be prescribed. Also codliver oil would be of use. In these prescriptions, containing arsenic and iron, arsenic and iron should only be considered as stomachic and not as hematopoetic.

Every true anemia during childhood is a serious condition and needs medical attention. True anemias can easily be grouped as:

1. Alimentary anemias
2. Postinfectious anemias
3. Hemorrhagic anemias
4. Congenital anemias and anemias resulting from rare blood conditions.

First: I would like to mention the alimentary anemias. This anemia is the most frequent one during infancy and childhood. It is caused by one sided milk feeding of long duration. Sometimes the anemia can be traced back to overfeeding with other foods, especially bread and potatoes. It was quite common in Russia to give a baby potatoes as regular meal. In severe cases the children look as white as snow or often yellowish. They are underweight and mostly very backward in their growth. Hemoglobin is found as low as 15 to 25%, the number of red cells reduced to 1,000,000 and less. Spleen and liver are usually enlarged, edema and hemorrhages in the skin are found. Rickets is very common. The children have no "pep" and no appetite and very often refuse any kind of nourishment. It is well known that one sided feedings with goat milk produces such anemias much quicker and more severe than cow milk feedings. I have seen such goat milk anemias very frequently during my stay in Turkey. In the Balkans, where quite a bit of donkey milk is fed, I found similar conditoins. The main therapy is to reduce radically the amount of milk given and to give mixed foods, especially vegetables and fruits. As a true alimentary anemia requires at least several months before it is well established, we usually do not see such anemias before the fifth and sixth month. I would suggest to give such an anemic patient, older than six months, for instance, as a first meal, about 180 Gm., half milk, half flour soup, or thickened cream of wheat soup with 5% of sugar; second meal, mashed zwieback (or crackers) mixed with some fruit without any milk; third meal, boiled cream of wheat in which vegetables and meat had been cooked; fourth meal, same as the first meal; fifth meal, cream of wheat or oatmeal gruel made out of 100 Gm. milk and 50 Gm. water with some fruit juice. Therefore, such a child would receive less than 300 Gm. (10 oz.) of milk during the day.

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*Read before the Lancaster County Medical Society, January 4, 1927.

Many pediatricians believe that alimentary anemia is due to lack of vitamines in foods. There is no doubt that lemon or orange juice or some codliver oil given daily, is of great importance, but the present day standpoint regarding feeding foods rich on vitamines in such cases is, that they only increase the general resistance power.

Recently the iron medication has been highly recommended again by Scandinavian writers, who drew our attention to the fact that good results only can be obtained by giving large doses. They recommend especially reduced iron 5/10 of a Gm. for each Kg. of bodyweight during the day, mixed with saccharum album. It is suggested to start in with half the dose in order to determine the compatibility.

In very serious cases, where the blood status is rapidly getting worse, the blood transfusion should always be performed, before it is too late. Very often, within eight to fourteen days, the amount of erythrocytes in 1 cmm. comes back to normal and stays normal.

I am quoting here the latest statements of Opitz, Berlin, who made more than 250 transfusions on children during recent years. Since coming to this country three years ago, I have seen only two cases of real severe alimentary anemia and these at Ann Arbor, whereas they are very frequent in European countries. The same is true for rickets. I doubt that they are so frequent here as the general hygienic conditions and living facilities are much better here. Also the population in the European countries live much more crowded than here and during the latter years of the last war and afterwards, such anemias were quite common and not only among children but also among adults.

Before performing a transfusion the quality of the doner's blood has to be determined by means of agglutination. After addition of 10% of a 2½% sodium citrate solution to prevent coagulation 10 to 20 cc. should be injected. Not more should be given at first, to be sure that no undesirable events as collapse and hemoglobinuria, show up. If this trial transfusion appears to be satisfying the main transfusion should be given. In order to increase the number of erythrocytes of a child about 1,000,000, 1/5 of the whole blood amount, should be injected, that means 15 cc. pro kilo bodyweight. Such a transfusion should be repeated at intervals of three to four days, once or several times, until the normal number of erythrocytes is reached.

For the most part, veins of the skull can be used. External application of xylol will dilate the superficial veins and make them more prominent. The use of the jugular vein is not always without danger and, therefore, a more experienced man should select the longitudinal sinus for his transfusion. If no vein is fit or pneumonia or poor circulation exists, one should inject 75-150 cc. intraperitoneal. It is advisable to use defibrinated blood, as citrated blood is not always harmless. The treatment of alimentary anemias by means of transfusion shows such success, as there never can be obtained by other means, but naturally this method should be only reserved for very severe cases, where the number of erythrocytes is markedly decreased.

Experimental studyings prove that we have to deal, by giving transfusions, with a substitutional therapy and that the activity of the bone-marrow only will be influenced secondarily.

Then I should like to mention the light therapy. There is no doubt that many such anemic children treated with natural and artificial light, will show good success.

As an aggravating factor in this kind of anemias (it is a fact that we find the most alimentary anemias in a poorer class of people), I should also like to mention the damages resulting from improper domestication. Therefore, as long as we do not pay the utmost attention to the correction of these conditions (lack of air and light, insufficient exercise), we never will get results as we expect. These anemias, however, resulting from poor hygienic conditions, are also described as anemias of its own origin. They are less known here perhaps, but quite common in the poorer districts of the European countries. And so you will find them described in the most text books under a special chapter as proletarian, room, school, and incubator anemias. I personally believe, that they should not be classified separately, as we always will detect some dietary errors in such cases. We will find those errors alone as also combined earlier or later, with signs of rickets. And anemia in rickets is a common symptom.

Furthermore, mental and psychic conditions of patient and parents serve mentioning, too, as many of these children being highly nervous (neuropathic) more or less refuse any kind of nourishment on account of not satisfying environment. These principals, of course, stand good for any kind of anemias.

Secondly, I would like to mention postinfectious anemias. The alimentary anemia favors the development of infectious processes and they for their part cause anemias again. And so we will find a continuous vicious circle. But in general we only have to deal with secondary anemias after infections, that means anemias with diminished color index with only sporadic normoblasts. Mostly we find a slightly enlarged spleen. Lues is quite often the cause of a chronic anemia and, therefore, a Wassermann test should be taken in all doubtful cases. Every marked anemia in the first six months of life is practically of infectious origin as alimentary anemia mostly requires several months of a wrong diet for its development. If the baby is very young, we should always remember, that we might be dealing with a constitutional anomaly. We know very well that premature children, twins, children of anemic mothers often develop severe anemias in spite of the best care and diet. In obscure cases where the Wassermann test also is negative, it is advisable to make a bloodculture.

The most frequent cause of anemic condition in early childhood is pyuria and the diagnosis of this condition is sometimes missed for the reason that an examination of the urine has not been made. A simple urine examination should always routinely be done, as we do it in grown-up persons. Technical difficulties offer no excuse. Besides pyuria, other septic processes of different etiology should be considered. In connection with this I would like to emphasize the importance of search for septic conditions in the mouth as it is a fact, that quite frequently a clinical mild gingivitis causes a marked anemia. I recall a case in Ann Arbor where a one year old child with hemoglobin, less than 40%, recovered in short time after curing such a mild gingivitis, which was overlooked for some time. It was a typical case where the parents knew for sure that the baby was suffering from teething.

Other septic conditions, I would like to mention are: Chronic discharge, chronic or subacute lung affection, especially tuberculosis. Every moderate anemia of unknown origin within the first year is more or less suspicious of tuberculosis.

During later childhood we are dealing more with bone and abdominal tuberculosis, which are causing anemias. The therapy in such cases is naturally an etiological one.

If we are not able to remove the anemia causing factors, we have to improve the anemic condition, in order to increase the resistance power of the organism towards the infection. For this purpose, if possible, a transfusion should be made. If the convalescent stage is dragging, iron and arsenic medication is indicated. Of course, besides these procedures, the hygienic-dietatic therapy should never be neglected.

Under the third group I would like to speak about the enemias resulting from bleedings. Such anemias during childhood appear after injuries, by hemorrhagic diatheses (hemophilia, Werlhof's disease, purpura hemorrhagica), by intestinal ulcers (melaena, typhoid fever, tuberculosis), as varicose bleedings by liver cirrhosis or thrombosis of the portal vein and its branches. They appear also on account of septic and other bleedings (navel bleedings for instance). Scurvy (Moller-Barlow's disease) can be mentioned here, too. Should we be able to stop the bleeding quite soon (by means of operation, coagulating substances, 10% sodium chloride intravenously, x-ray treatment, serum injection), then we can expect, if we did not have too severe and septic cases, spontaneous regeneration in about three to four weeks. In severe single bleedings or after repeated smaller ones which are causing insufficiency of the blood building system, a blood transfusion is the only thing to be done. Rapid loss of 1/4 to 1/3 of the whole blood, that means about 3% of the bodyweight, is endangering life.

In patients with retarded regeneration small injections of blood intramuscularly and in short intervals are advisable. Similar results are obtained with protein therapy, iron, arsenic medications and light treatment.

Under the fourth and last group I would like to mention all the anemias resulting from rare blood conditions as pernicious-anemia, the leukemias and pseudoleukemias, congenital, aplastic-anemias, the haemolytic and myelopathic anemias (poison). The "P. A." occurring within childhood are mostly described under the name of "Jac-Hayms" or "spleenic anemia", as they are said to differ from "P. A." of adults insofar as the spleen, as a rule, is markedly swollen.

Just to be complete I mentioned all these anemia producing diseases. They are so extremely rare during childhood and their occurrence practically does not differ any from conditions of grown up persons, that they should not be discussed here with the exception of the congenital diseases.

Among the congenital I should only like to talk about the "congenital haemolytic anemia" as this one is only of practical importance. We always should remember this condition in obscure anemias, especially during later childhood. We are dealing here with a familiar occurring "anemia" with bilirubin in the urine and large spleen and also mostly icterus. Characteristic are microcytes in the blood, a diminished resistance of the red cells toward hypertonic salt solution and very typical are the blood crises, that means a sudden increased destruction of erythrocytes. It was found that the extirpation of the spleen will remove the blood crises but not touch the abnormal behavior of the red corpuscles. Therefore, the not always harmless extirpation of the spleen should only be performed in the severest cases since the haemolytic anemia itself, as a rule, is not endangering life.

BLOOD TRANSFUSION*

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Blood transfusion has captivated the medical attention within the last few years. It is generally agreed that blood transfusion, when used judiciously, may often prove a life saving therapeutic procedure.

Since Crile's description of the direct vein to artery method, blood transfusion has been looked upon as a difficult and serious procedure; however, his views as to the indications for blood transfusion are still valid today. With the simplification of the technique and with the removal of the dangers to both donor and patient from incompatibility of the bloods, the indications for blood transfusion have been extended. A few historical remarks are apropos.

It is stated that the first blood transfusion was done on Pope Innocent the VIII(1), in 1492, for whom blood was taken from three young boys. The transfusion was unsuccessful: The Pope died and the donors likewise failed to recover because of the excessive quantity of blood removed. This version may not be historically correct, because Harvey did not announce the theory of the circulation of the blood until 1628.

The first authenticated blood transfusion was done by Richard Lower at Oxford University in 1665. He successfully transfused blood from one dog to another by means of a goose quill. A contemporary of Lower was Jean Baptiste Denys of France, who injected the blood of a lamb into the veins of a youth who made a successful recovery. For the next one hundred fifty years or so, blood transfusion was used as a measure of last resort; the reason for it was that violent reactions due to the blood incompatibilities were the rule.

In 1835 Bishop revived the general interest in blood transfusions by the use of defibrinated blood, thus obviating the difficulty of blood clotting; however, reactions were still common and the dangers were great. We owe a great deal to Crile(2) who since 1898 renewed interest in blood transfusion and presented the indications and contraindications that are still sound today.

The next step in the advancement of blood transfusion was the demonstration by Landsteiner(3) in 1903 of isoagglutinins in the human blood which he divided into three groups. Moss, in 1910(4), found this grouping incomplete and classified all persons into four groups. He also has shown that tests for isoagglutinins and isohemolysins are safe and reliable. He further demonstrated that hemolysis never occurs without agglutination; in other words when the blood serum of a donor does not clump blood corpuscles of a patient and vice-versa, hemolysis is not apt to occur. This is of practical importance as we test the blood for incompatibility by checking for their ability to agglutinate corpuscles of one person by the serum of another. The agglutinins in the human blood have a special affinity for the corpuscles which they clump. The agglutinins are rather stable and when the serum is kept in the ice box they persist for months(5). This has a practical application since one can keep on hand sera of known type 2 and 3 which are required for typing bloods. We kept the blood corpuscles as long as three months when we added formalin to corpuscle suspension in 2% sodium citrate and normal salt solution. The method for making solution was described elsewhere(6). According to Moss all normal and pathologic bloods could be classified into four groups. Jansky(7), three years prior to Moss, has classified people similar to Moss grouping; this fact, however, was unknown to Moss.

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*Read before the Pottawattamie County Medical Society, February 17, 1927.

A point of importance is that the classification of Jansky is used in some places, and Moss in others; therefore, when we depend on the typing alone we might make a serious error. A special committee headed by Dr. Hecktoen(8) has recommended the universal adoption of the Jansky classification. The only difference between the Jansky and Moss classification is that the type I and IV are reversed; type II and III are the same in both.

TABLE I

Behavior of cells and serum in the various groups.
Serum:
Group I (43%) agglutinates corpuscles 2, 3, and 4.
Group II (40%) agglutinates corpuscles 3, 4 (not 1, 2).
Group III (7%) agglutinates corpuscles 2, 4 (not 1, 3).
Group IV (10%) does not agglutinate any corpuscles.
Corpuscles I are not agglutined by any sera.
Corpuscles II are agglutinated by sera 1, 3 (not 2, 4).
Corpuscles III are agglutinated by sera 1, 2 (not 3, 4).
Corpuscles IV are agglutinated by all other groups.

It has been our custom to match the blood of the donor against that of recipient immediately preceding the transfusion in spite of the fact that both the patient and donor are known to belong to the same grouping. By following this routinely we feel that we are able to reduce the number of reactions due to incompatibilities of the blood. The recent work of Gutrie, Huck & Pessel(9) bears us out in the above statement. They have shown that there are probably five isoagglutinins and isoagglutinogens instead of four, AB-Ab-aB-ab. It may become necessary to modify the accepted classification of Moss and Jansky.

Capital letters are used to designate agglutinins contained in the serum and small letters designate agglutinogens contained in the red blood cells.

TABLE II

JANSKY Classification Group	MOSS Classification Group	Isoagglutinins and Isoagglutinogen
I	IV	A B
II	II	A b
III	III	a B
IV	I	a b

(This table is taken from "Transfusion of Blood" by Henry Feinblatt, the McMillan & Co., New York, 1926).

The isoagglutinins will agglutinate the corpuscles with the same isoagglutinogen; for example, group II serum contains isoagglutinin A and corpuscles of group III contain isoagglutinogen a, therefore, blood serum of group II will agglutinate corpuscles of group III.

In case of an emergency one may use a donor whose corpuscles are not agglutinated by the serum of the patient even if serum of donor agglutinates corpuscles of patient; the reason for this is that donors blood is so diluted as to become ineffective. Therefore, if one is not able to get a donor that belongs to the same group of patient, a donor of group IV (Moss) or group I (Jansky) may be used irrespective to what group the patient belongs.

As to the amount of blood to be transfused; we are of the opinion that patients who receive smaller amounts of blood are less apt to develop reactions than those who receive larger quantities of blood. However, this is not a hard and fast rule. We have a patient at the present time at the Mercy hospital, who at the first transfusion received 300 cc. of blood and the reaction that followed was rather insignificant; in the second transfusion only 150 cc. was used and the reaction that followed was rather alarming; both donors were properly matched against recipient before transfusion.

INDICATIONS

We shall briefly outline the type of cases in which we used blood transfusions from May, 1924, to Febr. 1, 1927. In the work prior to May, 1924, we used the sodium citrate method; however, the cases transfused by this method are not included in the present study. The cases include only those that were transfused by the direct syringe method. The method is that of Dr. A. I. Rubenstone of Mount Sinai hospital, Philadelphia, Pa. The method is simple and has proven very satisfactory to us. The total number of cases transfused forty-three; number of transfusions sixty-eight; average quantity of blood transfused at a single session was 250 cc.

Transfusion of patients who were anemic as the result of continuous bleeding and who required surgical intervention.

We had seven patients who lost considerable amount of blood; five of them as the result of bleeding from fibroid of uterus and two from gastric ulcer. In the gastric ulcer cases a blood transfusion in one of 450 cc. of blood checked the hemorrhage; the patient was operated on and made an uneventful recovery. The other case was that of perforated ulcer. The transfusion was given post operatively; the patient died of peritonitis a week after blood transfusion. The patients with fibroids, when first admitted to the hospital, were anemic to such an extent that operative interference was contraindicated. Blood transfusion was used as a preoperative measure.

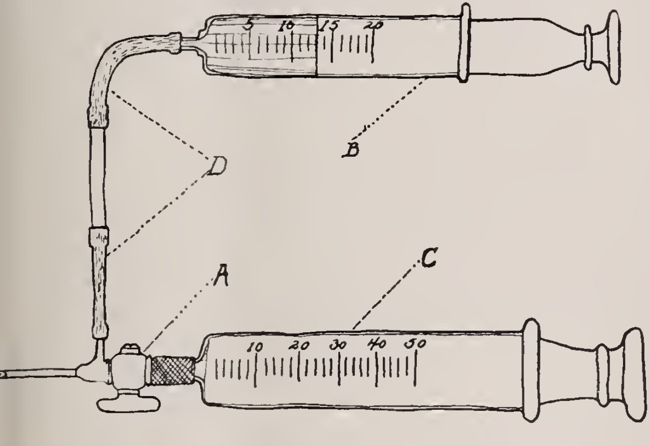

Fig. I

Diagram illustrating apparatus for blood transfusion.
A. Rubenston needle.
B. Glass syringe containing 2% sodium citrate solution. The sodium citrate is added drop by drop during the change of large syringes, to prevent the formation of a blood clot in lumen of needle.
C. 50 cc. glass syringe used to withdraw blood from donor. Similar apparatus is used for patient.

To cite briefly a case representing this group:

Mrs. I. C., age 46, patient of Drs. Hennessy and Patient, was admitted to the Mercy hospital, Council Bluffs, Iowa, on August 24, 1926. Six months prior to her admission to the hospital she began to bleed excessively from the uterus during menstrual periods. In July, 1926, she was flowing continually. When brought to the hospital patient was extremely weak and anemic; her blood being 2,300,000 red, 45% hemoglobin. Whites, 9,500; polys, 62%; small lymphocytes 30, large lymphocytes 8. Red blood cells showed poikilocytosis, anisocytosis and marked achromia. Physical examination revealed a fibroid of the uterus as the underlying cause of her bleeding. Patient was given fibrinogen and other conventional measures to check the hemorrhage. The hemorrhage was checked to some degree. Two days later she was transfused, receiving 250 cc. of whole blood. On Sept. 4, a hysterectomy was done by Dr. Hennessy and while on the table patient received 350 cc. of blood. Patient's condition gradually improved and on Sept. 20, one month after her admission, she left the hospital. Her blood at this time had risen to 3,400,000 and hemoglobin 60%.

We feel with others(10) that in cases in whom bleeding is repeated or prolonged, blood transfusion is indicated as it checks the hemorrhage and tides over the patient.

Tubal Pregnancy: In ruptured ectopic pregnancy with the patient in collapse blood transfusion is ideal. We had two such patients in whom blood transfusion was followed by marked improvement and we have reason to believe it has contributed to their ultimate recovery.

Hemophilia: This is one condition where blood transfusion, even in small amounts, acts as a specific therapeutic agent. The recent view is that in hemophilia, the blood platelets are normal in number but are abnormally stable. When blood is shed they do not yield so readily thromboplastin which is necessary for the liberation of prothrombin, a factor essential in blood clotting; the other elements concerned in blood clotting such as the calcium salts, fibrinogen, prothrombin are normal in amount. Blood transfusion checks hemorrhage by supplying normal blood platelets that yield thromboplastin; of course, when this substance is depleted hemorrhage recurs. We had four cases of hemophilia, three in adults and one in an infant. Two of them had hemorrhages from the nose and one from the kidneys. Blood transfusion checked the hemorrhage in the three adults after all the usual measures failed; we feel that it was a life-saving procedure. In the infant the bleeding from a circumcision was checked by local application of an extract from rabbits liver(11). It is highly desirable to know the blood type of a hemophiliac patient belongs to, and have on hand proper donors to be used in cases of emergency. Kolmer(12) advocates the intramuscular injection of blood once a month. This would seem to be a logical procedure.

Pernicious Anemia: In this condition blood transfusion has been used most extensively with varying results. Our own impressions are based upon ten patients on whom twenty-six blood transfusions were made. None of these cases were cured. Four showed remissions—one lasting three months, one two months, one four months, one two and one-half years; three of these patients are still living, one, four months after transfusion. One, two months, and one two and one-half years. The other seven patients died without showing any response to the blood transfusions. One of these patient's was moribund when the transfusion was made, and one had an aplastic type of pernicious anemia.

The striking feature in our patients that showed a remission was the almost immediate improvement in the total red blood count and hemoglobin as well as the general well being of the patient. One patient was bedridden for six weeks; she had a hemoglobin of 55% and red blood count of 1,400,000; after two blood transfusions, two weeks apart, her red count has risen to 3,300,000, hemo. 80%, and the patient gained in strength. She was able to walk around and to attend to light household duties. The characteristic glossitis and her achlorhydria, however, persisted in spite of her general improvement. An interesting point worth mentioning is that after one of our patients had a remission following three blood transfusions she went home; her hemoglobin began to drop; she returned to the hospital for another transfusion; her daughter was used as a donor now, but patient failed to respond, and died two weeks later.

It would seem best to change donors if improvement does not follow the first or second transfusion. It is not known definitely at present the way blood transfusion acts in pernicious anemia; it would be logical to suppose that the addition of healthy blood destroys temporarily the hemolytic agent (whichever it might be) or improves the hemotopoetic centres so that they begin to regenerate.

At any rate our experience is in accordance with that of Drs. Ottenberg and Libman(13), that "Transfusion is the best remedy for pernicious anemia, it never cures, but it leads to remissions in about half of the cases."

Miscellaneous Cases: This group of cases (total 20) included thirteen cases of general sepsis, streptococcic twelve, and staphylococcic one, five cases of anemia resulting from malignancy; two leukemia (splenomyelogenous). In all but three cases the transfusion was unsuccessful. In the three cases where the transfusion was of a distinct therapeutic value, one was a streptococcic septicemia following an abortion and the second was a streptococcic septicemia following leg amputation. These two patients have been desperately ill; the transfusions were given as a measure of last resort, after all other measures have failed. The patients received two transfusions each; the improvement was remarkable: Both patients gained in strength, their temperature that has been septic for three weeks gradually returned to normal level and they left the hospital in good condition.

The third patient had an accidental miscarriage; three days after she was admitted to the Mercy Hospital, she developed a gastric and intestinal hemorrhage. (Patient had a splenectomy at the Mayo clinic for Banti's disease in 1923). Patient was transfused with 300 cc. of blood. The hemorrhage from the gastro intestinal tract ceased. Patient developed a phlebitis of both legs two days after the blood transfusion; however, she recovered and last we heard from her she was enjoying good health.

CONCLUSION

1. In blood transfusion both patient and donor should be typed and in addition the blood of donor should be matched directly against that of the patient.

2. Blood transfusion is indicated in anemia due to prolonged continuous bleeding where surgical interference is necessary.

3. In hemophilia blood transfusion acts as a specific in checking hemorrhage.

4. In pernicious anemia blood transfusion does not cure the condition; however, it induces remissions in about one-half of the cases.

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NOT REASSURING

Patient: "I say, Doc, I took the wrong medicine by mistake."

Doc: "Well, that's your own funeral."

—*Minn. Ski-U-Mah.*

Convalescent: "Did you have my brown suit cleaned and pressed while I was in the hospital?"

His Wife: "No, I had your black suit fixed up. I thought that would be better in case anything should happen."

"COMMUNITIES SHOULD BE MADE SAFE FOR MATERNITY"

With Chart to Show the Safest Places in Nebraska to Have a Baby

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Maternity conditions in Omaha compare favorably with those over the United States. Maternal mortality over the country is from 6 to 9 per 1000 births. For the last 6 years in Omaha it has been 8.7, 8.9, 6.7, 3.1, 7.2, 8.9, per 1000 births. This means that every year we lose around 40 mothers from diseases incidental to childbirth. Our population is about 215,000, 34th city in the United States.

In order to give an idea of the locality in which we practice medicine, excerpts of a recent Chamber of Commerce Bulletin tell that Omaha is first in butter production; first in pig lead production; first in per capita park area; first in per capita telephone users; first in home ownership; second in livestock market; second meat packing center; fourth railroad center; fifth grain center; but we are sorry to say that we have not the lowest rate of maternal mortality of any of the cities. During the year 1925, the entire state of Nebraska had 167 deaths from puerperal causes; 65 from puerperal septicemia; 41 from puerperal albuminuria and convulsions; 61 from all other causes, making the maternal death rate per 1000 live births, 5.7. The average rate of maternal mortality for the whole United States is 7 to every 1000 live births, according to the U. S. Department of Labor, Children's Bureau Statistics, 1926.

We have two Class A medical colleges in Omaha, the University of Nebraska, College of Medicine and Creighton Medical College. Both schools have prenatal clinics for those mothers who cannot afford to go to private physicians. We have one doctor to every 440 people, yet some of the foreigners still employ midwives. Last year about 6 midwives attended 257 mothers.

At the University Hospital in 1926, there were 335 births—these cases were used for teaching purposes. Recently, we have been given a public health nurse to teach the student nurses the proper care of maternity cases delivered at home, encourage the mother to return for post-natal examinations, and instruct the mothers in the care and proper feeding of her infant. The Visiting Nurse Association has been very effective in teaching the value of prenatal care to the public who cannot afford to go to private doctors. During 1926, they made 1507 prenatal, natal and post-natal visits, and had 2335 infants attend their 6 baby stations where doctors and nurses advised the mother concerning the care and feeding of her baby.

Several nurses from the Visiting Nurse Association, especially trained in the care of maternity cases, have been assigned to both the University and Creighton medical colleges and have helped in the routine examinations of these patients in both clinics, supplementing the doctors' work with follow up calls in the home. Until July, 1926, they were also on call for home delivery service, but had to discontinue this work on account of a 20% cut in finances from the Community Chest. During 1926, Creighton University cared for 385 maternity cases making a known total of 720 obstetrical cases which were used for teaching purposes. As a rule about six medical students besides the attending nurses witness these deliveries in the hospital and two students the home deliveries.

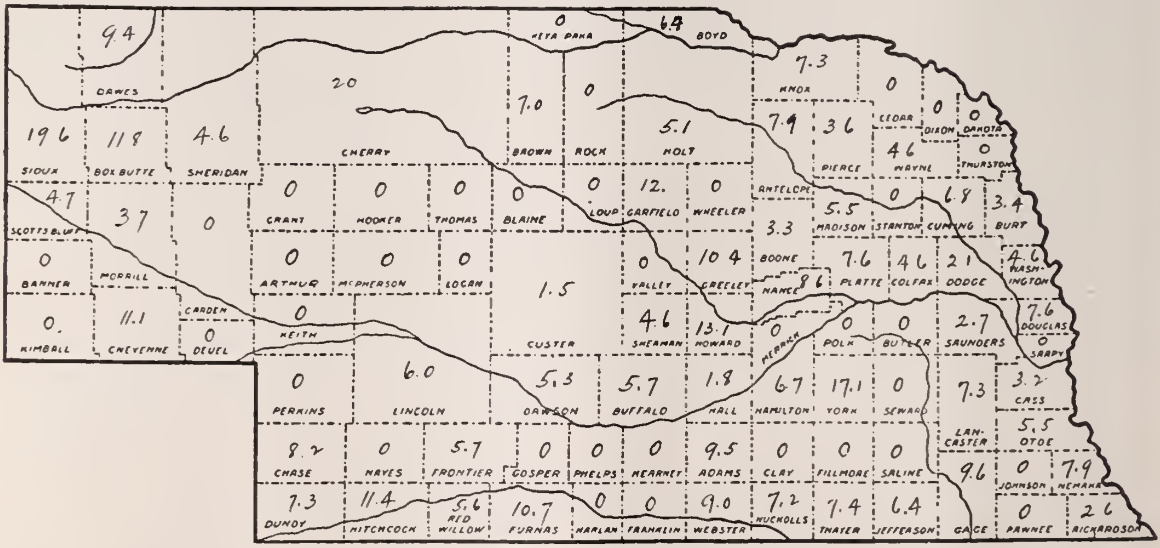
It can be seen then that the medical schools and social agencies are using their utmost influence to give the necessary and appropriate attention to these expectant mothers of the poorer classes during their prenatal, natal and postnatal cycles of the fetal and infant life. The patients report back to the two clinics every three weeks during their pregnancy, their pelvic measurements are taken, routine Wassermann taken, anti-luetic treatment begun immediately, if indicated, urine examined each time, blood pressure and weight taken each visit. If any of the danger signals of the toxemias of pregnancy are present. the patient is immediately hospitalized.

We have two homes where unmarried girls may come and stay before the birth of the babies. The Salvation Army Home is equipped with a delivery room, where a private physician cared for 99 patients last year. The Child Saving Institute is the other institution, but their patients go to the University Hospital for delivery. Both organizations insist that the mothers nurse their babies for 2 or 3 months postpartum.

We have 23 hospitals in Omaha with 2,135 beds which makes about 9.9 beds per 1000 population. A great majority of the private cases are delivered in hospitals—the Methodist Hospital had 541 babies in 1926. This illustrates that a large number of our mothers are cared for in hospitals where every advantage is given them. Ethylene and nitrous oxide oxygen anaesthesia, morphine-scopolamine narcosis and the rectal anaesthesia of Gwathmey are all administered by the various doctors to alleviate the suffering in the second stage of labor.

Some of our maternal deaths are due to the criminal abortionist who is ubiquitous and omnipresent. Some of these deaths have been traced to their doors and as a result we have had three physicians serving penitentiary sentences. Two have been recently paroled due to the influence of ministers of the gospel and well-meaning (?) influential citizens.

"Mothercraft classes" have been held throughout the state by the Division of Child Hygiene where the nurses in the branch of this service stress the need of every expectant mother visiting her doctor at frequent intervals during the prenatal period. This Division of Child Hygiene has sent the "Standards of Prenatal Care" (U. S. Children's Bureau Publication No. 153) to every physician in the state; and we see that every senior leaving the university has a copy in his possession before entering private practice. Expectant mothers have also been reached through monthly letters from the Division of Child Hygiene. Federal bulletins in prenatal, infant, child care, and child management are reprinted in the state and sent free on request. This work is made possible because the state legislature accepted the Sheppard-Towner Act and has assisted with the state funds.



RATING OF THE COUNTIES IN NEBRASKA ACCORDING TO THE MATERNAL MORTALITY PER 1000 BIRTHS

The following counties had no maternal mortality in the year 1926, which is indeed a very good record for 39 counties in the state of Nebraska. They are: Arthur, Wheeler, Banner, Blaine, Butler, Cedar, Clay, Dakota, Deuel, Dickson, Fillmore, Franklin, Garden, Gosper, Grant, Harlan, Hayes, Hooker, Johnson, Kearney, Keith, Keya Paha, Kimball, Logan, Loup, McPherson, Merrick, Pawnee, Perkins, Phelps, Polk, Rock, Saline, Sarpy, Seward, Stanton, Thomas, Thurston, Valley.

The maternal mortality in the remaining 54 counties is as follows:

		Per 1000 Births
1.	Custer	1.5
2.	Hall	1.8
3.	Dodge	2.1
4.	Richardson	2.6
5.	Saunders	2.7
6.	Cass	3.2
7.	Boone	3.3
8.	Burt	3.4
9.	Pierce	3.6
10.	Morrill	3.7
11.	Colfax	4.6
	Sheridan	4.6
	Sherman	4.6
	Washington	4.6
12.	Scotts Bluff	4.7
13.	Holt	5.2
14.	Dawson	5.3
15.	Otoe	5.5
	Madison	5.5
16.	Red Willow	5.6
17.	Buffalo	5.7
	Frontier	5.7
18.	Lincoln	6.0
19.	Boyd	6.4
	Jefferson	6.4
20.	Hamilton	6.7
21.	Cuming	6.8
22.	Brown	7.0
23.	Nuckolls	7.2
24.	Dundy	7.3
	Knox	7.3
	Lancaster	7.3
25.	Thayer	7.4
26.	Platte	7.6
27.	Nemaha	7.9
28.	Antelope	7.9
29.	Chase	8.2
30.	Nance	8.6
31.	Webster	9.0
32.	Dawes	9.4
33.	Adams	9.5
34.	Gage	9.6
35.	Greely	10.4
36.	Furnas	10.7
37.	Cheyenne	11.1
38.	Hitchcock	11.4

		Per 1000 Births
39.	Box Butte	11.8
40.	Garfield	12.0
41.	Howard	13.1
42.	York	17.1
43.	Sioux	19.6
44.	Cherry	20.0

Grand average of maternal mortality per 1000 births for whole state is 5.48. —1520 Medical Arts. Bldg.

MODERN ASPECTS OF NUTRITION: THE PATHOLOGY OF MALNUTRITION

22. The Relation of Faulty Nutrition to Heart Disease.—Continued.

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We have already discussed the changes in the size and weight of the heart in various types of undernutrition and malnutrition, and we are now ready to take up other phases of the pathology of the poorly nourished heart.

TOTAL INANITION

The effect of total inanition or of water ingestion only upon cardiac structure has received considerable attention from investigators. The earlier observations on changes during inanition gave only the gross features, such as the disappearance of the precordial fat, and the paleness, softness, and flabbiness of the starved heart muscle. Hayem(67), in 1877, made the first detailed microscopic study. He observed that the heart during acute inanition was affected much like skeletal muscle, and that it showed at times even more intense lesions than the latter. He stated that in inanition the human heart muscle undergoes atrophy. Voelkel(68) also came to the same conclusion upon studying the heart of a man dead from starvation.

The heart of the infant and of the child also reacts similarly to inanition. Nicolaeff(69) noted in famine-stricken children of various ages that the muscle fibers appeared atrophic, while Nobecourt(70) observed slight hypertrophy in some cases. In infants Monckberg(71) mentioned cardiac atrophy as characteristic of cases of athrepsia.

The cardiac muscle fibers appear smaller in length and in diameter. Morpugo(72) noted in starved pigeons a decrease in the average from 9.22 *mu* in controls to 6.50 *mu* in starvation, indicating a decrease of about 50 per cent in volume. Konstantinovitsch(73), in rabbits, and Beeli(74) in cats, described during starvation a decrease in the size of the cardiac muscle fibers. Heitz(75) also reported marked reduction in the measurements of the myocardial fibers in fasting rabbits and guinea pigs. That decrease in the size of the fibers is also characteristic of the human atrophic heart has been recently pointed out by Karsner, Saphir and Todd(76).

Cardiac atrophy resulting from abstinence from food is not of a simple but of a degenerative type. In pigeons dying from inanition following section of the vagi, Zander(77) reported fatty degeneration of the heart muscle fibers. Parrot(78) claimed the occurrence of slight fatty degeneration in the heart of the athreptic newborn. Voelkel(79) noted fatty degeneration in a starved man. Krieger(80) observed that in various human cachexias the pericardial fat usually underwent what he termed gelatinous degeneration. Eichhorst(81) observed that the fatty granules failed to blacken osmic acid, and doubted their fatty character. Manassein(82) found granules which were soluble in ether but not in acetic acid. According to Knoll(83) the amount of ordinary fat in cardiac muscle of starved pigeons decreases. At the same time there is an increase in other granules of lipoidal nature, with intermediate stages between these and fat droplets.

In starvation as well as in hibernation there is a possibility of the disappearance of fat in the cardiac muscle. Baroncini and Beretta(84) found at the beginning of hibernation an enormous accumulation of fat in the interfibrillar sarcoplasm of the cardiac muscle fibers. These fat droplets decreased gradually until at the end of hibernation the fibers were nearly fat-free. According to Rubner(85), various German observers have noted displacement of the heart resulting from the resorption of pericardial and abdominal fat.

A very constant characteristic in the heart muscle in all forms of cachexia is the presence of little granules of iron-free pigment in the muscle fibers. This type of pigmentation is spoken of as brown atrophy. It is present only in the heart muscle and in no other muscle. This pigmentary atrophy was reported by Stschastney(86), Hayem(87), Hueger(88), Manassein(89), and also Lepine(90).

The striations characteristic of the heart muscle may disappear as a result of starvation. Konstantinovitsch(72), Manassein(89), and also Isaew(91) reported loss of cross striation in rabbits, and Beeli(74), in cats. Coen(92) observed loss of cross striations in rabbits and kittens. Stschastney(86) found absence of striations in a man who died from starvation. Nicolaeff(69), examining famine sticken children of various ages, also reported loss in places of transverse striations.

In addition to the typical pathological conditions of the heart already touched upon we must not forget to mention the fact that we occasionally meet with vacuolation in the sarcoplasm, or in the cells and nuclei of the cardiac ganglia, and in the sympathetic ganglia. Changes in the size, shape, and staining power of the cells of the heart muscle are also noted.

What the exact picture of the histo-pathology will be depends, of course, upon the degree of malnutrition. Variot and Caillan(93) in atrophic infants describe three stages. The first stage occurs in nurslings that are not very atrophic. The heart is large. The muscle fibers are not atrophied, though some fibers may be so. Vacuoles are present, the muscle nuclei may be slightly increased in size and number, and the perinuclear sarcoplasm is abundant. The second stage shows far more advanced damage. The heart still appears hypertrophied, even though the body weight and stature are subnormal. The cardiac muscle fibers are distinctly atrophic, and none are hypertrophic. The nuclei are proliferated and deformed. The perinuclear sarcoplasm undergoes an increase in volume, and contains frequently many non-fatty vacuoles. The third stage shows still greater damage. The myocardial lesions are very marked. Atrophy and generalized vacuolization are very noticeable. The interstititial connective tissue of the myocardium shows multiplication of nuclei, and sometimes increase of fibrous tissue or enlarged interstitial spaces.

THE BLOOD PRESSURE IN INANITION

The experiments of Kagen(94) on fasting dogs demonstrate that inanition occasions a fall in blood pressure. The fall in blood pressure is partly due to the weakened condition of the heart, which the micro-pathological findings reveal. That it cannot be completely due to degenerative changes in the heart muscle is brought out by the fact that the lowering of blood pressure is observed in the very beginning of fasting. Part of the responsibility must be laid to changes in the blood vessels themselves. Merchand and Vulpas(95) noted extensive dilatation in the vessels of the brain, and Meyers(96) reported the same condition in the spleen and pancreas.

An interesting experiment with relation to blood pressure is that of Benedict and his colleagues(97), who made observations on Levanzin during the course of a fast lasting 31 days. They found a distinct decrease in the arterial pressure during the first 15 days of fasting. The constant drop in pressure was followed by either an average constant value or by a slight tendency to rise in the last part of the fast. The pulse pressure, that is the difference between the systolic and diastolic pressure, continued to fall off until about the 15th day, and was followed by a period of low but approximately constant values.

THE HEART BEAT DURING INANITION

The rate of the heart beat changes markedly during inanition. During advanced stages of inanition the rate diminishes considerably. Bidder and Schmidt(98) observed the pulse rate in a starving cat during the most advanced stages of inanition, that is, during the last three and a half days of its existence. The normal pulse rate was 170 per minute; 87 hours before death it was 160, 51 hours before death it was 121, 33 hours before death it was 112, 18 hours before death it was 109, and 7 hours before death it dropped to 88. Benedict and his collaborators(97) studied among other things the pulse rate of Levanzin during a prolonged period of fasting. For the first three weeks the pulse rate went down continuously, diminishing by as much as 22.3 per cent.

THE RESPIRATION RATE DURING INANITION

The observations of Benedict and his colleagues(97) made upon Levanzin in a fast of 31 days, have made it clear that the rate of respiration gradually increases with the progress of the fast. At the same time there takes place a diminution in lung ventilation. The normal lung ventilation per minute in the case of Levanzin went down from 5.13 liters to 4.87 liters. With a diminuation in the lung ventilation, there was also a decrease in the lung capacity as measured by the number of liters of air driven out in a maximum expiration. The vital capacity in the case of Benedict's subject diminished progressively. It was 3.74 liters on the second day of the fast, 3.15 liters on the 24th day, and 2.71 liters on the 31st or last day of the fast.

THE VAGUS NERVE DURING INANITION

The vagus undergoes marked alterations in the course of inanition. In frogs fasting a few days, stimulation of the vagus, according to Busquet(99), caused inhibition in 86 per cent of the animals, and complete cardiac arrest in only 14 per cent. On the other hand, frogs starved for two months caused inhibition following vagus stimulation in 14 per cent, and total cessation of heart activity in 86 per cent. When the frogs were fed for several days the original response to vagus excitation was recovered. Jordan(100) observed that the vagus nerve of fasting dogs loses its irritability. The longer the inanition the more marked the loss of irritability. In this connection we must mention again the fact that pathological changes in the cardiac ganglia and in the sympathetic ganglia occur, especially in advanced stages of inanition.

The influence of inanition upon the electrocardiogram would no doubt reveal many interesting facts. Lawson, Morgulis and Guenther(101) have made a preliminary study of the heart of the dog by means of a string galvonometer. Their results thus far have revealed a certain degree of cardiac instability.

AQUEOUS INANITION

Pathologic changes in the heart are also to be observed in conditions resulting from the ingestion of dry foods. Pernice and Scagliose(102) found inflammatory changes in the heart, especially in the endocardium. The perivascular connective tissue showed increased thickness and was richer in nuclei and spindle cells. The heart muscle itself was pale, stained less distinctly, and more homgeneously, and the striations also were indistinct. The myofibrillae were thinner and less closely packed. The nuclei were numerous and some even showed mitotic figures.

NUTRITIONAL EDEMA

The edema resulting from malnutrition, known by such names as hunger edema, famine edema, war edema, or epidemic dropsy, is not without marked effect on the heart. In this conditions, as we have already pointed out, the heart may lose very considerably in weight. In addition, marked pathological changes of a degenerative nature take place in this vital organ. Edema, brown atrophy, changes in fat content, as well as fatty degeneration are quite characteristic of the heart in nutritional edema. Von Jacksch,(103) Schittenhelm and Schlecht(104) observed brown atrophy of the cardiac muscle. Jansen(105) described pigment masses at the poles of the cell nuclei. Oberndorfer(106) found complete absence of glycogen and fat droplets. Mann, Helm and Brown(107) designated the appearance of the cardiac surface as edematous or gelatinous. Park(108) and Menzies(109) reported edema of the aurio-ventricular junction. This edema probably represents the local metamorphosis of the epicardial fat, frequently observed also in other conditions of chronic inanition.

Very characteristic of nutritional edema is marked bradycardia. The pulse is extraordinarily small, slow and soft. It is interesting to note that in the type of edema due to malnutrition, adrenalin does not have the power to raise the blood pressure, and the usual heart stimulants, digitalis and caffeine, have little effect, while atropine has no influence on the bradycardia.

ENDEMIC GOITER

Cardiac symptoms in endemic goiter, especially if the enlargement persists in middle life, may arise primarily from nutritional disturbances, or from pressure causing interference with innervation, or passive congestion.(110) The condition resulting is essentially a myocarditis associated with dilatation, predominantly of the right heart. A considerable percentage of simple goiter in middle life is accompanied by an elevated blood pressure and by evidence of cardiorenal disease. The heart in benign enlargement of the thyroid has been described as the goiter heart of Rose in contradistinction to the goiter heart of Graves' disease.

INVOLVEMENT OF THE HEART OFTEN SECONDARY TO PATHOLOGY ELSEWHERE IN BODY

The symptoms produced by the myocardium, the seat of the disease, are identical with those produced when the heart muscle is weakened from toxic influence or from poor nutrition, as in chlorosis and other anemias. In the acute anemia produced by rupture of a large vessel or an aneurism, or by hemorrhage in peptic ulcer, or as the result of injury to a vessel, dyspnea, rapid heart action, arrhythmia and faintness are prominent symptoms. A defective food supply due to mechanical interference, as in carcinoma of esophagus or the stomach, may impair nutrition in more remote organs. With reference to local anemia of the various organs, such as the heart, we may state that functional disturbances may come from cutting down the blood supply as a result of vascular trauma, arterial spasm, pressure due to neoplasms, arteriosclerosis, a permanently low blood pressure, or from a blood supply poor in oxygen-bearing elements or in nutritive components derived from the gastro-intestinal tract.

CHLOROSIS

Chlorosis is a deficiency disease, resulting from lack of iron. In this condition the pulse is generally more or less quickened, and is very susceptible to change in posture or emotion. The heart may palpitate to the great distress of the patient. The palpitation is especially felt on exertion. This limitation in response to effort is an indication of the existence of impairment of the functional efficiency of the heart. After effort the rate does not readily subside to the normal. The impairment is brought about by oxygen famine, the result of which is manifested in the deterioration of heart and blood vessels. The cardiac and vascular damage may sometimes attain serious proportions.

The heart in chlorosis varies a great deal.(111) Its beat is often throbbing or labored. The volume of the heart is also variable. In some cases it is increased; in others it is diminished. The increase, which is usually moderate and temporary, may be in variable directions, though generally on the right side. In chlorosis dilution of blood takes place, and the circulating volume is therefore greater than normal. It is believed that the dilatation of the heart in chlorosis is an effort to accommodate for the excess of blood and for the insufficient oxygenation occasioned by the low hemoglobin and low red cell count.

Some deterioration of the myocardium is a feature of chlorosis, as of all anemias. The change in the heart muscle is primary and is best observed in the papillary muscles, especially those of the left ventricle. Healthy fibrils occur together with others within which fatty granules have accumulated.

In chlorosis the arteries often throb. The vessels are full, though slackened in tone. The veins pulsate, and the pulsations in the veins of the neck are pathological in degree. The pulsations are increased by pressure in the liver and abdomen. The aorta is dilated, and throbbing is evident in the epigastrium and in the episternal notch. The arteries, especially the aorta, may present on the inner coat dull yellow spots and striae. Superficial erosions of some extent may also be detected.

Hemic murmurs, that is venous and arterial murmurs, are characteristic of chlorosis. The murmurs heard about the heart in this condition are mitral in origin. They are significant of atony of the cardiac muscle.

PERNICIOUS ANEMIA

Pernicious anemia will be discussed here, because of the growing evidence that it is a deficiency disease. It probably is a mixed deficiency due to lack of iron and vitamins concerned in mineral metabolism. The most recent advances in the treatment of this disease have come from the dietotherapy advocated by Minot and Murphy.(112) The recent work of Simmonds, Becker and McCollum(113) indicates a close relation between vitamin E and iron metabolism.

Symptoms referable to the heart are sometimes the first ones which the patient becomes cognizant of in pernicious anemia. Very early in the course of the disease he may complain of palpitation, faintness, or actual syncope. The blood pressure has a tendency to be low.

The physical signs of the heart are those common in anemia and myocardial weakness. A blowing, systolic murmur is heard, and it is loudest in the second left intercostal space close to the sternum. The systolic murmur is generally audible over the whole cardiac area. It is evidently of hemic origin, for a similar murmur is heard in the large arteries, and a large hum in the jugular veins. The carotids sometimes pulsate violently, and a distinct thrill may be heard over these vessels as well as over the large veins in the neck. Diastolic murmurs, presumably dependent upon the dilatation of the aortic valve, may also occur.

The heart in pernicious anemia, according to Cabot and Richardson(114), may often reveal hypertrophy of very considerable degree. The heart muscle shows fatty degeneration and presents a tiger-lily-like appearance.

OBESITY

Obesity is a condition in which the heart and circulation may easily be involved. The extent of the involvement depends, of course, upon the degree of obesity. Arteriosclerosis and hypertension are by no means rare concommitants. Apoplexy in the obese is not infrequent. The arteries may show fatty degeneration in the intima and media, and sclerotic changes. Atheroma of the aorta or of the coronary arteries was noted in 25 out of 122 post-mortems reported by Forchheimer(115).

The most frequent complaints are embarrassed cardiac action, palpitation, shortness of breath, cyanosis, edema. General muscular weakness is experienced. Walking is difficult.

The myocardial weakness may ensue as a result of fatty overgrowth. The heart may be overlaid with fat from the mediastinal tissue. A thin layer of fatty infiltration may be present in the interstitial connective tissue directly beneath the epicardium. Anders(115a) has designated this overgrowth subpericardial overfatness in contradistinction to fatty infiltration.

Fatty infiltration itself, which consists in a dipping down of fat between muscle fibers, is of rare occurrence except in extreme obesity. Even then it is limited to a thin layer of muscle fibers directly beneath the epicardium. The infiltrated fat may bring about atrophy of the cardiac muscle fibers as a result of compression. Of still less frequent occurrence than fatty infiltration is fatty degeneration of the heart muscle as a sequence of fatty infiltration.

When fatty infiltration or when atrophy is marked, the walls of the heart may weaken to such an extent as to cause sudden death especially after a heavy meal or while bathing. Even rupture of the heart may take place. The latter type of lesion is especially frequent in marked obesity, and Forchheimer noted it in 25 case reports.

Before leaving the subject of obesity with relation to cardiac and circulatory involvement, it would not be out of place to sketch briefly and hurriedly the two clinical types of obesity—the plethoric type and the anemic type(116).

THE PLETHORIC TYPE OF OBESITY

The plethoric type is especially common in males who are habitually excessive eaters and drinkers of fluids, such as beer. The onset occurs in youth or early manhood. The blood of a plethoric individual is especially rich in hemoglobin and red cells. The former may be increased to 110 per cent, while the latter may reach as high as six million. This richness in blood components is reflected in the florid complexion, in the congestion of the lips and ears, and in the hyperactivity of the sweat glands of the skin. The neck is thick, and the abdomen prominent.

The skeletal muscles and the heart seem well developed. The fat overlying the heart may mask the cardiac impulse and the area of cardiac dullness. The heart sounds may be clear and audible. The overlying pads of fat, however, may weaken their force. Cardiac decompensation may develop, and with it cardiac asthma, angina, or general anasarca. The pulse may be full and strong at first, but may subsequently become weaker and dimmed, and shorter in frequency. Sometimes bradycardia is noted. It must, of course, be understood that the severity of the symptoms may depend upon the amount of excessive weight the individual is burdened with.

THE ANEMIC TYPE OF OBESITY

The anemic type of obesity is more common in women. Sometimes the plethoric type merges into the anemic variety. The deposited fat rarely reaches the extreme amount it does in plethoric individuals. The blood picture shows anemia of the chlorotic type. The hemoglobin as well as the red cells are low. The former may go down to 33 per cent, while the latter rarely falls below 3 or 4 million. Poikilocytosis of greater or lesser degree may be found, and even an occasional nucleated red cell may be present. Leucocytosis in moderate form may also exist.

The skin shows profuse sweating, which predisposes to intertrigo and eczema beneath the breasts, in abdominal folds, and around the scrotum or labia. Other skin affections, pruritis, acnea rosacea, and alopecia, are frequently found. The muscles appear soft and flabby, and the subcutaneous tissue may often reveal the presence of lipomata.

The heart and circulation in the anemic type of obesity may show typical symptoms referable to anemia—hemic murmurs, falling blood pressure, cardiac insufficiency, and anasarca. As a result of the anemia, the appetite is impaired and capricious, the menses are scanty, painful, and irregular, and a marked tendency to intercurrent infection exists. Cerebral hyperemia occurs and results in vertigo, tinnitis, and throbbing of the carotids. These symptoms may be relieved by epistaxis.

VITAMIN A DEFICIENCY

The effect of vitamin A deficiency on the heart has been studied by several investigators. The results reported are conflicting. Emmett and Allen(116a) and Davis and Outhouse(116b) found no definite changes in rats on diets lacking in vitamin A. On the other hand, Herter(116c) noted cardiac enlargement, hemorrhage, and slight "granular degeneration" in the muscle fibers of the heart in pigs subsisting on food short in vitamin A or the anti-ophthalmia vitamin.

HEART INVOLVEMENT IN INFANTILE TETANY

The condition of the heart in rickets we have touched upon previously. We shall now briefly take up one or two points with reference to the heart in infantile tetany. There are two types of cardiac involvement in this condition(116d). One is associated with a hyper-irritability of the accelerators, and the other with irritability of the vagus. The treatment must take the two types into consideration. Sudden death in tetany in infants is due to heart involvement and not to asphyxia. The heart muscle itself may develop tetanic contractions.

PELLAGRA

In pellagra, the heart which is atrophic, shows evidence of fragility, and pigmentary and fatty degeneration. Lombroso(117) found brown atrophy in 28 out of 35 cases, and fatty degeneration in 3. Tuczek(118), Marie(119), Kozowsky(120), and Raubitschek(121) also reported brown atrophy and fatty degeneration. Kozowsky, in addition, described pigmentary degeneration of the cardiac ganglia, and cardiac fibrosis, especially along the vessels. The pulse in chronic pellagra is usually 100, in acute pellagra it may be 120. The pressure is usually low.

Conditions, similar to pellagra, induced experimentally in rats and other animals, show, according to Nicholas(122) and to Sundwall(123), cardiac lesions somewhat resembling those found in human pellagra.

SCURVY

The typical scorbutic findings show the following characteristics: A blood picture of an anemia of secondary type, changes in the complexion of the individual, in the gums, and in the skin, petechiae, subcutaneous and intramuscular hemorrhages, edema about the ankles in the early cases and general edema in the late cases, bloody-serous fluid in the pericardium, pleura, and the large joints, hemeralopia, a feeling of fatigue, shortness of breath, and a rapid pulse. Hemic murmurs may be heard especially at the base of the heart. There may be marked palpitation and irregularity of the heart beat. This picture suggests involvement of the circulatory system and of the heart. In the primary stage there is noted a peculiar paleness of the skin, melancholy, apathy, muscle weakness, and slight dyspnea. Some claim the presence of polypnea, but no dyspnea. In the later stages, the patient suffers very much from dyspnea and palpitation, and faints easily. The heart becomes progressively weaker.

Not only the heart rate but the respiration rate is also increased in scurvy. The normal ratio of respiration to pulse rate in babies is about 1 to 4. In infantile scurvy the pulse in some instances may attain a rate of 200, and the respiration may be increased to 60. The ratio between rate of the heart and rate of respiration, therefore, alters, becoming usually 1 to 2.

X-ray examination of the heart shows a well marked broadening at the base at the site of the large vessels. Diminished breathing is observed posteriorly at the base of the lungs. Cardiographic tracings, according to Hess(124), show a simple tachycardia, such as is common in exophthalmic goiter. The T wave is exceptionally tall in some cases.

The heart itself is, as a rule, hypertrophied. Findlay(125), however, observed dilatation, but no hypertrophy in scorbutic guinea pigs, although La Mer and Campbell(126), and Bessesen(127) reported a slight increase in the weight of the heart. According to Aschoff and Koch(128) both ventricles may be enlarged. Schodel and Nauwerk(129) report hypertrophy of the ventricles and dilatation of the right heart. There is almost always an increase in pericardial fluid, which is of a bloody-serous nature.

The pathological histology of the heart muscle in scurvy gives definite evidence of grave involvement, suggesting loss of anatomic integrity and physiological vigor. Comrie(130) described brown atrophy. Hojer(131) found atrophy of the cardiac fibers with necrosis and a tendency to calcification. Sato and Nambu(132) observed fatty degeneration in the human heart, and Holst and Frohlich(133) in guinea pigs. Findlay(134), however, reported loss of striation in the muscle fibers, but no fatty degeneration. The interstitial stroma appeared edematous in places and showed capillary congestion. Definite hemorrhagic infiltration of the heart wall was also observed.

(To be continued)

SHOULDER PARALYSIS DUE TO BIRTH INJURY (ERBS' PARALYSIS)

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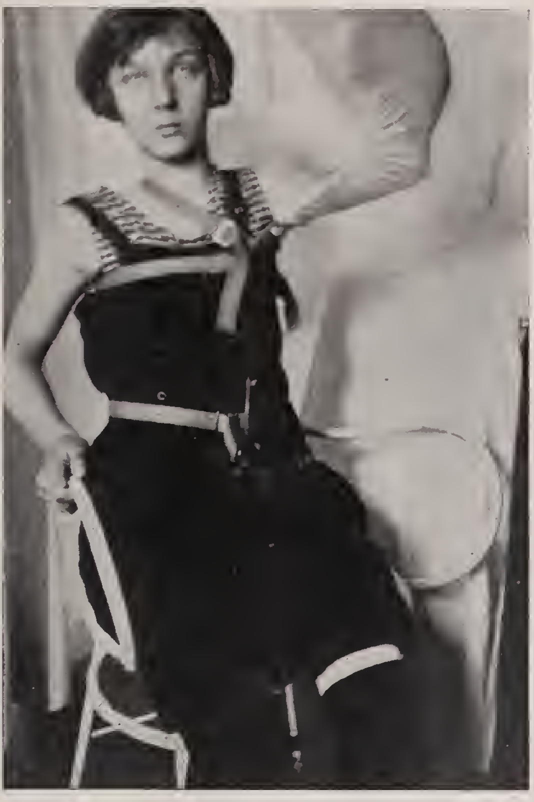
Four recent cases have afforded a striking illustration of the importance of taking care of these patients who have crippled arms as a result of injury at birth. It has been my experience that such cases are advised at first by their attending physicians as a rule, in a spirit of extreme and usually unjustifiable optimism and that later the stame attending physicians advising the same patients are entirely too pessimistic. In other words, the parents of such a child are usually told at first that the paralyzed shoulder will recover without doing anything in the way of treatment and then when the child is from two to five years old and has got to the stage where he is making little or no use of the hand, cannot even feed himself, etc., the parents are told that there is no cure for the condition and that it is useless to do anything.

This type of shoulder paralysis is due to a stretching or tearing of some of the upper roots or branches of the brachial plexus. The persistence of the deltoid paralysis and the disability are due almost entirely to neglect of the primary condition—to the fact that the deltoid and some of the scapular muscles are permitted to remain in a constantly over-stretched condition. Consequent contracture deformity of the pectoral and other adductors and pronators of the hand and arm takes place and increasing deformity and disability result.

If the paralytic condition is recognized early and correct splinting (see cut) is employed at once, recovery to a large extent is almost certain to occur. Recovery of all the nerves except in the most extreme cases does in fact usually occur. But if the muscles which these nerves supply have been permitted to remain for months or years in an over-stretched position, the recovered nerves find them unable to respond to stimuli and an apparent complete paralysis persists.



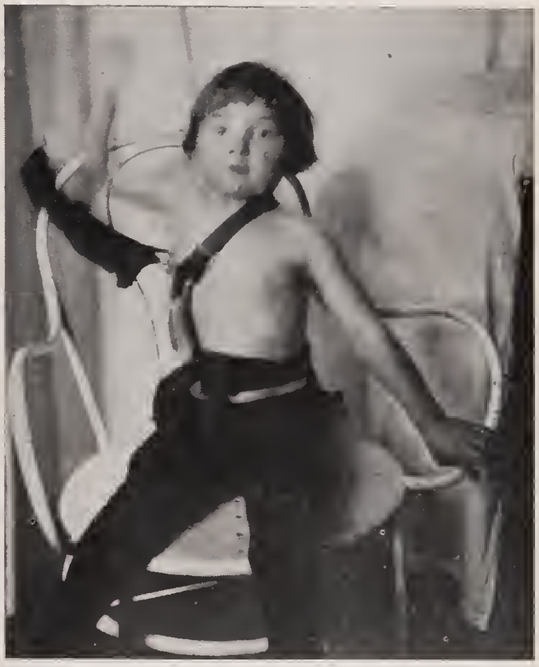
Case No. I. Showing patient in splint soon after operation. Arm could not be abducted before operation.

If, on the other hand the muscles have (by correct splints) been maintained in correct position and have retained their contractile power then when the nerves recover we have a functioning group of nerves and muscles by which correct movements may soon be restored and deformity and disability prevented.

Even in the late cases with flail arms and fixed adduction and pronation deformity a measure of deformity may be corrected and function restored by manipulative correction and a period of splinting or by the relief of contracture deformity and suitable after care according to the operative technique worked out by Sever of Boston.

In three of my recent cases Siever's method has been employed. In the fourth case manipulation, cast and splint were sufficient. The case records are as follows:

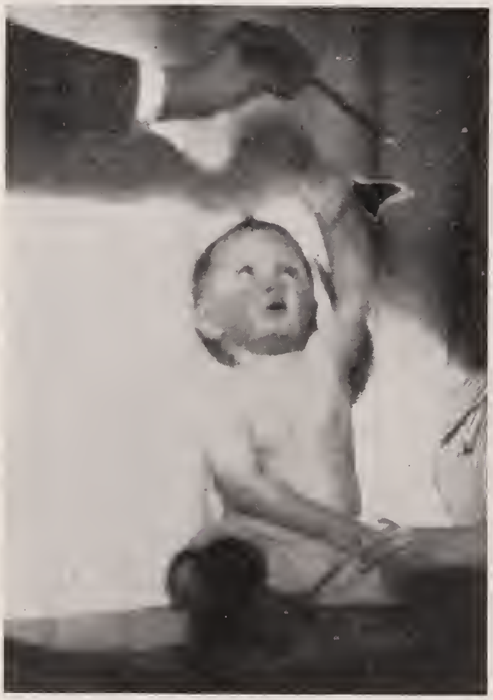
Velda S., age 12. This girl came to the hospital after twelve years of disability with a severe deltoid and also a musculospiral paralysis. She was making very little use of the arm and not much use of the hand. The arm hung quite flail from the shoulder and there was extreme atrophy of the entire arm and hand. In order to relieve the fixed adduction deformity an open operation was done upon the shoulder, dividing not only the scapular but the pectoral muscles. The arm was carried well up and externally rotated, a plaster body and arm cast applied and kept in this position for two months. An aeroplane splint was then applied with the arm well above the level of the shoulder. In October she had begun to raise the arm from the splint voluntarily and there was also some return of power to the dorsal flexors of the wrist. She is continuing to make marked improvement and in spite of her many years of complete disability will have a fairly useful arm and hand.



Case No. II. Showing ability to lift arm from splint after about two months of treatment.

A. R., age 4. This little girl had an unusually severe paralysis of the shoulder and the entire arm since birth. She could make some use of the hand but not very much. There was adduction and internal rotation with fixed deformity at the shoulder. Open operation was done and the subscapular muscle tenotomized. A body and arm cast was applied with the arm abducted well beyond a right angle with the body. This patient was kept in the hospital for three weeks. The wound healed primarily and she was changed at once from a cast to an aeroplane splint. In October she showed some improvement in the use of the arm and was already able to lift the arm off the splint. At the present time (two months later) this child can do anything with the arm although there is still some weakness and atrophy. She is making a striking and fairly rapid recovery which is usual in these cases where the patient can be treated in the first few years of life.

J. E. S., age 7. This boy was seen for the first time July 12, 1926. There was a moderately severe paralysis of the shoulder of what is known as the upper arm type. The hand and forearm were fairly useful but the arm could not be abducted at all and could only be carried forward a short distance. There was ability to flex the elbow to about one-third of the normal. External rotation of the shoulder was practically absent. Every attempt to passively abduct the arm caused the adductors to become very tight, when the arm had been abducted about thirty or forty degrees. Operation was advised and this was done a few days later. The adductors were divided and the arm fully abducted and externally rotated. A body and arm cast was put on; this cast was left on just one month then the cast was removed and an aeroplane splint was put on. The arm was abducted well beyond a right angle with the body, the hand and arm externally rotated, etc.



Case No. III. Erbs' paralysis. Almost complete absence of power in deltoid and Cii at 8 months. (May, 1926). In plaster body and arm cast with arm fully abducted for 6 weeks. Since that time in aeroplane splint. Illustration shows condition in November, 1926.

The boy was seen again in October, at that time he was able to raise the arm up to a right angle, could feed himself with this hand and was showing all signs of rapid improvement. Active physiotherapy was inaugurated, and an increasing amount of use of the arm was advised. By the end of November the splint was being left off for school, he was making free use of the arm, could lift the arm well above the head and was showing signs of making an almost complete recovery.

H. D. Age 8 months. May, 1926. Severe brachial paralysis of the left arm since birth. Is making no use whatever of the hand and arm and has not done so since birth. A body and arm cast was applied with the arm in full abduction and external rotation. This child was young enough so that, with anaesthetic, manipulative abduction was sufficient to fully overcome the contracture deformity that had developed. No open operation was necessary. The cast was left on four weeks, at that time the cast was removed and an aeroplane splint put on. This child improved rapidly and in September was able to fully abduct the arm and was making good use of the hand. The condition in November is shown by the photograph. The baby still has some limitation of motion in the direction of abduction and there is a slight internal rotation but the photograph shows that good abduction and external rotation are possible.

All of these cases, even the two older ones, illustrate the points already referred to, namely, that some recovery will take place in nearly all these cases and that abduction brought about either by manipulation or by open surgical division of the contracted structures with prolonged splinting in correct position afterward and physiotherapy, are the methods necessary for relieving these patients. Even the most severe cases of this sort we have seen will respond to treatment to some extent and in most cases even a little improvement in a hand or arm will convert a useless arm into one that is useful.

MENTAL HYGIENE*

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Mental Hygiene has many aspects, but in this talk, I will endeavor to give a short description of its origin, its definition and some of the diseases which come under its scope.

The term "Mental Hygiene" is an expression which was coined by Dr. Adolph Meyer in 1909 and was used as the title under which was launched the first organized movement for teaching the public how the mind must function even from earliest childhood in order to produce a healthy personality, free from emotional conflicts and insuring a life of mental satisfaction and contentment. Also its purpose is to show the effect that faulty or neglected development of the mind or the emotions may have in the production of mental diseases, nervous diseases, insanities, neuroses, feeblemindedness and other defects of the mind.

As a branch of medicine, mental hygiene is not new, but is as old as the mind itself and bears the same relations to the treatment of mental diseases as physical hygiene does to the treatment of medical diseases. Whenever the cause of a physical illness is discovered, physical hygiene is used to prevent the unnecessary occurrence of that disease, so also as the etiology of mental diseases are recognized by psychiatrists and psychologists mental hygiene can and should be employed to prevent whenever possible their occurrence in others.

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*Radio Talk, January 8th, W.O.W. Station, Omaha, Nebraska.

With regard to surgical or medical diseases, patients are as a rule quite willing to seek treatment early in order that chronic or incurable complications may not develop and later they may talk freely of their experiences and even be boastful of having gone through a surgical operation but very rarely is this so with regard to mental diseases, as even in this enlightened day there still exists medieval ideas of secrecy, stigma, or of an evil or supernatural spirit being in some way connected with persons suffering with a mental disease. The fact does not seem to be accepted that a mental illness is a disorder of the mind and the peculiar conversation and behavior of patients so affected are merely symptoms, showing interference of the mental functions, just as pneumonia is a disease of the lungs which interferes with breathing and appendicitis a disease of the intestines which interferes with the proper digestion of food.

Mr. Clifford W. Beers, as a result of a true and intimate knowledge of the treatment and behavior of mentally diseased persons acquired as a patient for three years in mental hospitals, upon recovering his mental health, became profoundly impressed with the feeling that the question of mental diseases, as a public health problem, was one which demanded immediate attention. With this object in view and with the idea of interesting others in it, he wrote an autobiographic description, in book form, of his experiences, as a patient in mental hospitals. This book is entitled "A Mind That Found Itself." Immediately following its publication in 1908, because of the encouragement with which it was received, and at the suggestions of psychiatrists who saw a practical application in his ideas, Mr. Beers formulated in the same year, the first State Mental Hygiene Society, that of Connecticut, and in the next year, the National Committee for Hygiene was organized under the leadership of physicians directly interested in psychiatry and with the warm support of all those interested in the prevention of mental diseases. This important movement under the title "Mental Hygiene" has, during the last eighteen years, grown amazingly.

However, it may be defined in a few words, as that branch of medicine which has for its object, the promotion, the development and the preservation of mental health. It is evident that possibly the largest single field of the mental hygienist is that of the young and developing child, when prophylactic measures offer the greatest hope of response—this child phase of mental hygiene is now being ably taken care of in most places by the establishment of permanent child behavior and child guidance clinics.

Because of its very nature, mental hygiene concerns almost everyone and embraces two essential parts, i. e., the individual himself and his environment. The environment if unendurable, should be changed, or if unsatisfactory may be modified to certain degrees, but if these changes cannot be economically accomplished, then the individual must adjust himself to the environment in such a way that it will cause him the least possible harm or discomfort. It is frequently, but not always, easier to adjust environmental conditions than to adjust the physical and mental conditions of the patient, as it is impossible because of the mutual dependence, to separate, for treatment, the mind from the body.

All physical diseases have an important mental or emotional phase, and certainly all mental diseases rest more or less upon a physical basis. It is a common observation that a physical disease in a parent may explain the mental defects of a child. The best illustration of a progressive mental deteriorating disease is that of general paresis which is both physical and mental and the mental symptoms are at the present time being treated and improved by super-imposing on the already physical disease and added curable acute febrile ailment. Also a mild case of paresis may become severe as a result of worry, stress, anxiety or any disturbance of the emotions, equally as well as physical fatigue, long hours of work, loss of sleep, focal infection, improper food and almost any disease which tends to reduce physical efficiency. It is certainly true that the combination of chronic alcoholism and a syphilitic infection almost invariably results in time in a severe mental or nervous disease.

In the neuropsychiatric clinic of the Creighton Medical College we see many types of mental and nervous diseases which are improved or cured by clearing up the chronic infections in various parts of the body. A young man 21 years of age was brought to the Clinic following a severe typical epileptic convulsion and upon removing several pussy and decaying teeth, he has been free from attacks.

A little girl with fear of the dark, mild fainting spells and loss of appetite improved remarkedly by the removal of her tonsils and several decaying teeth.

Many cases of children with chorea are cured and heart trouble and rheumatism prevented by the removal of infected tonsils and clearing up of others areas of infection.

A girl with blinking of the eyelids and slight spells of fainting was cured when a refractive error of the eyes was found and corrected by proper glasses.

A boy was whipped by his parents for falling down when he was suffering with a muscle disease with which he was hardly able to walk or stand.

The American Medical Association has launched a campaign advising regular periodic health examinations as a public health measure. The examination is to be done once or twice a year, just as most people at definite intervals have their teeth examined. This is an excellent idea in regard to the early diagnosis of organic nervous diseases as many latent nervous disorders developed very slowly, and quite frequently can be found clinically years before they produce any symptoms.

Many mental symptoms and diseases like hysteria, neurasthenia, psychasthena, psychoneurosis, obsessive ideas, nervousness, irritability, phobias, periodic depressions, compulsions, lack of ability to concentrate, anxiety and other mnetal conditions which seldom, indeed, cause insanity, but probably produce more misery and pain than any organic disease, offer a splendid field for work by the mental hygienist. These persons must certainly form new mental habits, and be readjusted both to themselves and to their environment. They must also build up a supply of mental and physical reserve energy, to prevent easy fatigue and keep their physical condition at the best possible level. Such persons should form the habit of orderly thinking, of having wholesome stimulating interests of all kinds, of looking upon life in a normal way, of cultivating a proper balance between stimulation and response, of having a sensible division of work and play and of having a reasonable appreciation of success and failure.

Mental hygiene must make it commonly known that the hope of cure of mental disease lies in having the very beginning of any mental disorder brought immediately to the attention of the medical advisor and that these early symptoms must not be overlooked or passed over as individual peculiarities and the condition allowed to progress until the sufferer now, because of his pronounced and almost incurable symptoms, must be placed in some asylum.

Most mental diseases due to non-specific focal infection such as the teeth, the tonsils, the sinuses, etc., can be prevented if the cause be found and alliviated, also the mental and nervous diseases resulting from tertiary syphilis could be eliminated if we could have prevented the syphilitic infection of the patient some five to fifteen years previous. This, however, is easier said than done, but a periodic neurological examination could have found the nervous system beginning to be involved and at that time by treatment could have prevented further advance and destruction of the nerve tissue.

In conclusion, I want to say that the early treatment of mental diseases is quite as essential as the early treatment of physical diseases and that a neuropsychiatric clinics should be consulted quite as freely and as readily as a prenatal, a medical, surgical or a nose and throat clinic, for it is only in this way, that cures and prevention of the development of mental and nervous diseases can be obtained.

A MENACE OF MODERN SURGERY

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The last fifty years has witnessed a wonderful advancement along all scientific lines; not the least of which has been in the science of medicine and surgery. Of the two most prominent divisions of medical science, internal medicine and surgery, it would be impossible to say which had made the greater advancement; but it is safe to say that the advancement in surgery has been much the more spectacular.

Before the discovery of a safe general anesthetic, surgical operations were performed only in the most extreme cases. After the discovery of ether and chloroform, the operation being less trying upon both patient and surgeon, surgery became more popular. But it was not until along in the sixties, after Pasteur had shown that fermentation and putrefaction were caused by the presence of countless living organisms, and that the processes could be prevented by means of asepsis and antisepsis, that surgery took on real activity, and men became truly skilled in the art of surgery.

It is within the last twenty-five or thirty years, well within the professional lifetime of surgeons still living and operating, that surgery has made its most wonderful strides. The skilled surgeon of today is almost a miracle worker. He cuts his way into the interior of a human body, enters fields, which until a generation ago, were forbidden territory and removes offending tissues with as much assurance as the automobile mechanic raises the hood of your car and tests out the different parts. His assurance is not assumed, it is real, because he knows his anatomy and his pathology, and he knows perfectly what he may or may not do safely.

There is nothing at all spectacular about the action of internal medicine. It acts slowly and, not always, too surely, but it acts; and the skilled internist, familiar with the workings of the human system in sickness and in health; and, with the potency of his drugs, and their effect upon the human organism, in health and disease, may be almost, if not quite, as certain of his results as the man with the knife. But the skill of the internist is masked under a gradual improvement and a slow recovery of the patient and makes no appeal to the general public. Even the doctor often becomes disgusted with himself and all drugs on account of the slowness with which the patient responds to treatment.

But, with surgery, everything is different. There is the bustle of preparation for the operation; the white gowned, and masked, surgeon with his attendent helpers; the anesthetizing of the patient; the operation, with the blood flowing freely; then the closing and dressing of the wound, and the putting of the patient to bed, where he soon passes out or gets better, either of which results is satisfactory to the untrained, unthinking mind. Yes, every thing about an operation is spectacular; and herein lies one of the menaces of modern surgery. Not every man is so constituted by nature as to become a successful surgeon, and but few of us are able to recognize our limitations.

The trend of the times is toward operation, and more operations. Thousands are being swept along with the tide into the field of operative surgery who would have been able to render much more valuable, and much less dangerous service, to mankind, as automobile mechanics or blacksmiths, than as surgeons. General anesthesia and a knowledge of antisepsis has made it easy for the merest tyro to cut into the human body and then heal the wound. But cutting and healing is only an insignificant part of scientific, successful surgery. Knowing when to cut, how to cut, and what not to cut; along with knowing what to do after you have cut, are the essence of successful, scientific surgery, and no one without this knowledge should be allowed to operate except in the case of an emergency.

It has never been positively determined just which route man took in his evolution from the protoplastic state to his present condition; but I have heard it intimated that he came by way of the peacock route. The peacock loves to spread his tail and strut. He wants to be noticed and admired by the crowd. We are all very much like the peacock, we love the acclamation of the people. The showy surgical operation; the man with nerve to cut, like the chiropractors ad, hold a strong appeal for a credulous public, and finds them ready to acclaim him, almost, a superman. This love of acclamation leads many a good man away from some field of usefulness, where he might be a help and a stay to his fellow man, in time of need, into realms demanding larger calibre, more accurate knowledge, greater skill and training than he possesses, and makes of him a menace instead of a help to his fellow.

It is easy to lure a medical student away from a lecture on anatomy or theory and practice of medicine, or some other dry subject, but it is rare, indeed, that he misses a surgical clinic. But there is another lure, stronger, perhaps, than the lure of vanity, which is active in drawing young men into the field of operative surgery. It is the lure of the almighty dollar. The wide difference in the size of the fee in the average medical or obstetrical case and the average surgical case, is not a difference based on difference in intelligence, education, ability or skill of the operator; but a difference which is made possible through the credulity of the people, and their propensity for being humbuged and imposed upon.

Would any sane minded individual claim that it took a higher grade of intelligence, more education, a longer period of study, or more skill to perform a simple appendectomy than to conduct a woman through the lying-in period? Of course, not. He knows better than to attempt it before an intelligent medical audience; and yet, the average fee in the one case is from $25.00 to $50.00 and in the other from $100.00 to $250.00 owing to the patient's ability to pay. Take another illustration, that of a laparotomy for the removal of a pus tube, and compare it with a case of pneumonia. Would any one claim that it takes more time, a higher grade of intellect, more thought and study to safely conduct the former case than the latter. Of course, not. And yet, the fee in the former case will vary from $150.00 to $500.00, owing to the ability of the patient to pay, and the surgeon's gall and ability to charge; and in the latter, from $50.00 to $75.00, owing to the duration of the disease and the distance of the patient from the doctor's office. Is it any wonder that so many doctors are anxious to do a little surgery to help in keeping the wolf from the door? Another menace of surgery is the habit of thought it engenders, and its influence upon the number of operations performed; and this applies to all surgeons, skilled and unskilled.

I began the practice of medicine long enough ago to come in contact with the old army surgeon who served through the Civil war. As a rule, they were strong, able men, and not bad surgeons for their day and time: but they were not considered good counsel in the case of an accident. During the war of The Rebellion the lack of knowledge of antiseptics, and their value in all operations, as well as the lack of facilities for the care of the wounded made conservative surgery almost nil. The surgeon sacrificed limbs freely for the sake of saving the soldier's life, and in so doing established a habit of thought which he carried with him into civil practice. Now a surgeon, performing many operations, acquires the surgeon's habit of thought. He views all cases from the surgeons's point of vision, and sees just how easy the whole matter can be remedied by a little cutting, which, to him, signifies nothing. He is honest in his convictions. He believes the operation to be for the best interest of the patient. But at this point, as I have several times done, call in an internist, a diagnostician, a man who does no surgery, and observe the difference in the point of view. He is a conservative, and at once sees how all the trouble can be removed by taking a little time; and many times he is right; thus saving the patient a surgical fee as well as the discomfort of an operation.

Now if this habit of thought can influence the real surgeon, where the fee is never an object, how much greater will be its influence with the man who, though not in reality a surgeon, for there is a real difference between a surgeon and a man who cuts, is nevertheless performing operations; and where the fee is one of the main consideration! Perhaps the internal medicine man is as prone to acquire a habit of thought in line with his work, as the surgeon, and become too conservative, and deny an operation where an operation is really necessary. To prevent an error in either direction it might be well to make universal a custom which is being practiced now, in most of the better hospitals, of having the patient examined by both the diagnostician and the surgeon before a decision is arrived at.

The degree of Doctor of Medicine, as conferred by our medical schools, bestows upon the recipient the right, when he has passed the State Board of Examiners, to practice both medicine and surgery. This is as it should be. There are constantly arising, in the work of the general practitioner, emergencies where it is imperative that he do a little surgery, but there should be limitations.

The College of Surgeons, notwithstanding the fact that they were accused of trying to monopolize the whole field of surgery, is a step in the right direction, but it does not go far enough. The society was not organized with any monopolistic idea in view, but to protect the people. But its requirements are not high enough. Almost any doctor who has performed a few successful operations, saying nothing of those that were unsuccessful, may be able to get recommendations which will admit him to membership in the society. The society, itself, recognizes that some such mistakes have been made, but they are powerless to correct them. There should be certain requirements as to time, education, ability and experience, before any man was allowed to work as a general surgeon; and this experience, should not be gained at the expense of the life and health of the general public. Any doctor wishing to set himself up as a general surgeon should be compelled, first, to serve an apprenticeship, of a fixed term of years, under a recognized reputable surgeon. Not only assisting him, but performing the different operations under his supervision and with his assistance; and then to pass a satisfactory examination before a competent body of surgeons. If this were done it would destroy our right to complain about high surgical fees. They would be entitled to large fees and other doctors and the general public would recognize this right.

Why electrocute a criminal for killing another criminal in a bootleggers war over the division of spoils, and allow men to go on learning surgery at the expense of the lives and health of a credulous public? The crime element, in the one case, may be greater than the other, but the victim, in either case, is equally dead.

"Prohibition has accomplished an enormous amount of good, and with better enforcement can accomplish much more for the health and welfare of the people. The medical profession, as a whole, recognize this fact, and support the constitution and the amendments. On the other hand a noisy active minority of the medical profession are taking advantage of certain provisions of the amendments and selling their souls for a mess of pottage."—A. D. Bevan, M. D.

"Marriage is what intervenes between lipstick and broomstick."

NEBRASKA UNIVERSITY HOSPITAL
CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST, and A. J. MILLER, M. D., PATHOLOGIST.
Edited by
L. L. Davidson, M. D.

CASE NO. 21428. December 17, 1926.

A married colored woman, age 36, was brought to the receiving room on a stretcher, November 23, 1926, complaining of:

Cramplike pains in lower abdomen
Nausea and vomiting
Bloating
Insomnia.

She was admitted to the Medical Service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: She was married at 14 years, gave birth to her first child at 15 years, and had had eight other children and two miscarriages from one and one-half to two years apart. During each pregnancy the patient had been sick at her stomach, this condition always having been relieved after delivery. Her periods have been regular.

About two or three weeks ago and at the usual time of her period, she noted nervousness and backache. Her period did not actually begin until about twenty days later. At that time she was very tired and weak, and when standing up she complained of a bearing-down feeling as if her womb were dropping out.

Because of cramp-like pains in the lower abdomen a doctor was called who packed the vagina with gauze packing removing it in twenty-four hours. The packing relieved the pain. Spotting occurred the following day, lasting only two or three days.

Nausea and vomiting began about one week ago preceded by pain in the lower abdomen and sides. The pain was most severe when she turned on her sides and was always relieved by vomiting. Because of this pain and vomiting, patient had stopped eating and drinking. She had retained no food on her stomach for the past week, was weak, restless, nervous and had slept but little.

PREVIOUS HISTORY: At the age of 7 years, patient had typhoid fever and at 26 years measles. Her menses began at 13 years and had been regular both in occurrence and duration, the last regular period having been in October. There was burning on urination. There had been no stomach trouble except during pregnancies at which time she had been almost continuously sick to her stomach and had vomited. She had always been constipated. She had never had any lung trouble or frequent cough. She weighed 137 pounds last April and weighed at entrance about 110 to 115 pounds.

FAMILY HISTORY: Her father had died at 45 of typhoid fever and her mother at 60 was living and well. There were no brothers or sisters. Her husband was living and well at 38. There was no cancer, tuberculosis or nervous diseases known in the family.

PHYSICAL EXAMINATION: A very emaciated and dehydrated colored woman squirmed in bed but had no particular complaint. Her face was cadaveric, her eyes glaring, her cheek bones prominent, her expression anxious. T.99.4; P.143; R.40.

Head: The pupils reacted to light and accommodation. The alae of the nose were dilated. The teeth were only in fair condition. The tonsils were present but were not abnormally enlarged.

Neck: There were no palpable glands in the neck and the thyroid was not enlarged.

Lungs: Thorax showed marked emaciation and the breathing was thoracic in type. Expansion was equal and there was no alteration in vocal fremitus or resonance. There were a few fine rales heard on deep inspiration in both apices which were not displaced or altered by cough. There was no moisture at the bases.

Cardiac: The apex of the heart could not be felt. The size and shape were not given. The heart rhythm was tic-tock in type and heard best in the 5th interspace mid-clavicular line. There were no murmurs but the sounds were indistinct in the second interspace. Pulse was very rapid (160?), regular and easily compressible although the blood pressure was 160/?.

Abdomen: The abdomen was markedly distended, tense and rounded. No masses or irregularities were felt. There was bulging in the flanks and flatness. Moving onto either side caused pain and shifting flatness.

Vaginal: Examination was unsatisfactory because of pain. The cervix felt smooth and resistant. The uterus was not definitely made out, though a small irregular mass was felt in the cul-de-sac, which on pressure produced great pain.

Extremities: The knee jerks were doubtful and the Babinski reflex was absent. During the examination the patient was nauseated and vomited a small amount of greenish, sour-smelling material containing food particles with relief.

LABORATORY: Three urine specimens, the last catheterized, were practically the same. The catheterized specimens had a specific gravity around 1016-22, were acid in reaction and contained a 2+ albumen, no sugar nor diacetic acid, a few hyalin casts and an occasional R. B. C. and pus cell to the uncentrifuged high power field.

Blood counts taken the day of entrance and day of death varied: Hb 80% to 88%; R. B. C.'s 5,280,000 to 4,120,000; W. B. C.'s 14,000 to 10,500; neutrophiles 90 to 85% and lymphocytes 10% to 15%. The blood pressure dropped to 90/? the day of demise. Blood cultures taken the day before death were negative. The blood Wassermann was negative.

PROGRESS: The patient had been seen by Dr. E. C. Sage just before entry: "Patient very anemic. Respirations rapid (30-40) and heart sounds weak and regular but very fast (150-160). Lungs seemed clear, few rales heard at the apices in the back. Abdomen quite distended and exquisitely tender. Abdomen tympanitic throughout but some shifting fullness in flanks. Vaginal examination unsatisfactory but cervix felt smooth though there was a laceration. There was a hard nodule in the cul-de-sac which did not feel like a fecal mass. It was very tender. The body of the uterus could not be made out."

She had been unable to retain food for the last week and although she claimed not to have eaten she vomited undigested food at entrance. The following day the vomitus became fecaloid in character and surgical consultation was sought. Dr. A. J. Brown gave the following report: "Abdomen markedly swollen. No rigidity. Pulse low pressure. Temperature 97.4, leukocytes 14,000, polys. 92%. History of vaginal and uterine treatment after period. Was two weeks overdue. Patient dehydrated and vomiting fecaloid material. Advise gastric lavage, hypodermoclysis, and high colon enema to overcome dehydration. Possible jejunostomy indicated."

Nov. 25. Gastric lavage every 4 hours brought back fecaloid material. Enemas returned clear. No bowel movements. Patient complained only of hunger and thirst.

Nov. 26. Levine tube passed and through duodenal drainage 20 ounces obtained. Skin cold and clammy. Pulse weak and rapid (160?). Complained of pain in left upper abdomen.

Nov. 27. An x-ray of the chest was reported negative.

Nov. 28. Examination of abdomen revealed a palpable mass in the region of the spleen. Over this area there was definite crepitation. No connection existed between this crepitation and the points of insertion of hypodermoclysis needles beneath the breasts. Patient was semi-delirious. There were no bowel movements. Nurses reported that only about one pint could be taken by bowel and the patient expressed no discomfort. The enema returned clear. Catherization was necessary.

Nov. 29. Patient was irrational. The mass in the upper left abdomen was reported as being hard, and nodular. Patient died a cardiac death the same evening.

Throughout the terminal course of the illness, the temperature varied irregularly from 97 to 103, being 101.6 at the time of death. The pulse was irregular, averaging 130 but being as high as 170 (?). The rate and rhythm, at first regular, became irregular but the quality was never good. Respirations were elevated throughout, being up to 50 on eight readings and on the last day.

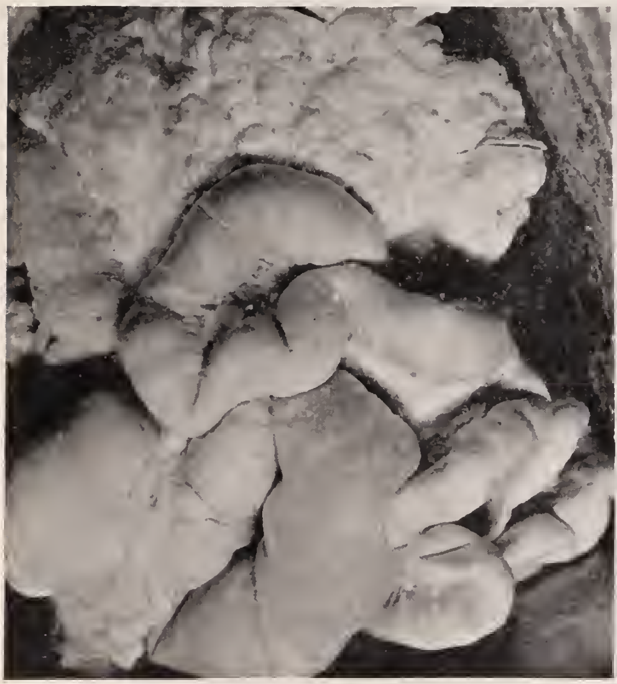

Fig. 1. The thick omentum above is infiltrated with tumor. In the lower part of the picture is the loop of distended jejunum obstructed where it passes under a collapsed loop of the jejunum in the center of the picture.

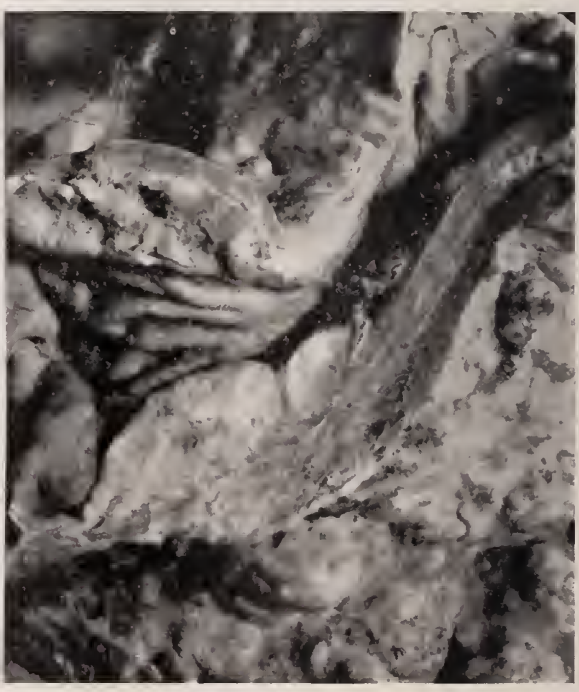

Fig. 2. Stomach opened on the anterior aspect. Note the thick tumor mass in the wall where section was made. This tumor was continuous with the mucosa and the tumor in the gastro-colic omentum.

DR. A. D. DUNN'S DISCUSSION

If collapse might be substituted for insomnia and inability to get bowel movements added to the bill of complaints we would have cramp-like pains in the lower abdomen, inability to get bowel movements, vomiting tending to become feculant, tympanites and collapse—the syndrome of ileus.

There was history of disturbed menstrual function. Her last period came twenty days late with nervousness and backache. She felt tired and weak and when standing she suffered a bearing-down feeling as if her womb were "dropping out". She was packed by a doctor because of cramp-like abdominal pains and after removal of the pack twenty-four hours later, spotting had occurred. Pain in the lower abdomen and sides preceded the nausea and vomiting. This history is significant because the pelvic symptoms may in some way be associated with the cause of ileus.

There are three types of ileus: (1) anatomical or mechanical, (2) dynamic, and (3) adynamic or reflex. Among the common mechanical causes may be mentioned stenoses, constricting bands, hernial strangulations, neoplasms, pressure from tumors, intussusception and volvulus. The best illustration of the dynamic type is the ileus occasionally seen in lead poisoning. The adynamic or reflex type may occur in nephrolithiasis, in thoracic troubles, especially those involving the diaphragm, cholelithiasis, peritonitis, pelvic disease, etc.

There had been no stomach trouble except during the pregnancies at which time she had been almost continuously sick at the stomach with vomiting. She was constipated and had some anorexia.

Pelvically, there are a few significant facts. She had had nine children, all living and well. Her periods had been regular every month until the last period (twenty days overdue). She had had recently bearing down feelings and burning on urination. She had lost weight from 137 pounds last April to about 110-115 pounds at time of entrance.

In the physical examination emaciation is the first thing that strikes us. "A very much emaciated and dehydrated colored woman lay restlessly in bed, cheek bones were prominent, the eyes were glaring and the expression was anxious". Why should the patient be emaciated? Patients should not emaciate in three weeks unless there is something chronic back of an acute condition. Because of the ileus and emaciation carcinoma must be ruled out with care.

The respirations were 40 and labored and the alae of the nose dilating—an ominous symptom of profound toxemia. The breathing was thoracic in type. Expansion was equal and there was no alteration in the vocal fremitus or resonance. A few fine rales were heard on deep inspiration in both apics which were not displaced nor altered by cough. I am inclined to look upon these findings as being muscle rales since there were no other symptoms of consolidation recorded. The heart was apparently normal. Since the thorax was essentially devoid of evidence of gross pathology, the explanation of the rapid and labored thoracic respiration must have been abdominal distention or toxemia.

The abdomen was markedly distended, tense and rounded. There was bulging in the flanks and flatness. The flatness was shifting and turning to either side produced pain. No masses or irregularities were felt. Nothing is said in regard to peristalsis. The presence or absence of peristaltic waves is a matter of great importance. With the syndrome of ileus present, peristaltic waves are important localization phenomena. The shifting flatness may have been due either to free fluid in the peritoneal cavity or to shifting intestines filled with fluid. The pain on turning may have been due to traction on the mesentery or an inflamed area by shifting of loaded intestines.

The vaginal examination was unsatisfactory because of the pain. The cervix felt smooth and resistant and the uterus was not definitely made out. In the cul-de-sac an irregular, painful mass was felt. The size of this mass was not given. Later Dr. E. C. Sage made mention of a hard nodule in the cul-de-sac. If other similar nodules had been felt it would have spoken clearly for carcinoma. Carcinoma of the cervix is hardly possible with the negative physical findings and carcinoma of the body of the uterus would hardly have done a patient to death so rapidly.

The urine showed a 2+ albumen, many hyaline casts and a few red and white cells. The albuminuria persisted as well as the characteristics of the sediment. The quantity of pus cells is important. If they were considerable in number it would speak for nephritis.

Intern: There were only occasional pus cells in the centrifuged specimen.

Dr. Dunn: We must interpret the urinary findings then as due to cloudy swelling.

The red blood count and hemoglobin were normal, but the white cell count was increased to 14,000 with a rather high percentage of polymorphonuclear leukocytes. Such a leukocyte count is not what one would expect to find in a diffuse peritonitis running over a considerable period of time. Such counts may well have been due to toxic absorption from the ileus or to a low-grade infection. Supporting this argument against peritonitis as the cause of the ileus we have the statement of Dr. A. J. Brown who saw the patient within twenty-four hours of entrance; "Abdomen is markedly swollen but without rigidity".

An abdominal examination four days after entrance revealed a palpable mass in the region of the spleen, which the next day was described as being hard and nodular. Over this area there was definite crepitation. There was no communication between this crepitant area and the points of insertion of the hypodermoclysis needles. This mass had not been felt at earlier examinations and I cannot account for the crepitation.

Dr. Bridges: The mass felt like omentum rolled up, and it was not felt until late. The crepitation gave the impression of an emphysema. We could distinctly hear and feel crepitation giving the impression that it was under the skin.

Dr. Dunn: I cannot explain such a finding, unless it be due to areolar tissue, which had lost its fat. We will attempt to construct a pathological diagnosis:

1. Ileus, mechanical in nature. The duration of the disease points to a slow-going process and the ileus must be located low down and must have been slowly progressive to the point of complete obstruction. We will expect to find the cause of the obstruction located below the splenic flexure. The facts that only one pint of water could be injected per rectum, and that there was too much tenderness to make anything out definitely by vaginal examination, and the menstrual disturbances point to trouble in the pelvis.

The diagnosis of ileus is established by cramplike pains in the abdomen; vomiting, becoming fecaloid in character; inability to get a bowel movement; distention; collapse; death.

2. The mass in the region of the spleen that was not felt until several days after entrance was presumably scybalae. It is hard to conceive of a carcinomatous mass of the nature described escaping detection in the earlier examinations.

3. The cause of the obstruction may well be explained by some pelvic inflammatory process which hypothesis the disturbed menstrual function, tenderness, failure of rectum to take more than one pint of water, leucocytosis, etc., support. In this event the shifting dulness in the flanks must be explained by shifting fluid-containing intestines. A malignant process with carcinomatous peritonitis, however, cannot be completely excluded. Were the mass in the upper abdomen not of such presumably rapid development it would go far to establish the diagnosis of carcinoma.

4. Peritonitis negative, except such as might have recently developed in the immediate vicinity of the obstruction, or pelvic peritonitis.

5. Cloudy swelling of the kidneys.

6. Lungs, liver, heart muscle and spleen negative except for such changes as are found in death associated with toxemias.

DR. A. J. MILLER'S DISCUSSION

External Examination: The body was poorly nourished. The abdomen was moderately distended. On the left side of the trunk just above the crest of the ilium was an area the size of a hand over which crepitus could be felt which gave the impression of gas beneath the skin.

Trunk Cavities: The peritoneal cavity contained 2500 cc. of dark fluid. The serosa was smooth. There were no tubercles or other evidences of infection. The parietal peritoneum was markedly thickened by tumor tissue implanted on the surface. In the region of the posterior cul-de-sac it was about 3 mm. thick and the uterus was adherent to the posterior wall obliterating the space. The edge of this folded and tumor-infiltrated peritoneum was undoubtedly the mass felt by the examining finger on vaginal examination.

Viscera of the Trunk: The thoracic viscera were not remarkable. The intestines were matted together by tumor growth that was implanted on the surface. There was a little gas in a short section of the transverse colon near the liver. The remainder of the gastrointestinal tract was entirely collapsed save for the duodenum and about 18 inches of the jejunum which was much distended. This distention was abruptly stopped where the jejunum passed under a more distal loop of the jejunum that was firmly bound down to the great omentum. (Fig. 1). The omentum was greatly thickened and very firm. In the mid-portion of the stomach was an ulcerating infiltrative, epithelial growth continuous with that in the gastro-meso-colon. (Fig. II). The area of musoca involved by tumor was about 4 cm. in diameter. At the mesenteric attachment of the small bowel there is much tumor throughout its entire length. The liver contained only one small metastasis in the central part of the right lobe. The pancreas was entirely free from tumor. The lymph nodes were hard and enlarged, most of them entirely replaced by tumor tissue. The spleen, adrenals, uterus and its adnexa were free from tumor.

Microscopic: Sections of the stomach showed an epithelial tumor infiltrating the entire wall. The stroma was moderate in amount in the mucosa and as the tumor was followed out toward the serosa there was less new stroma, the tumor using the normal tissue for support. The cells were quite atypical but in some areas they tended to be columnar and a few imperfect gland forms were seen. Similar tumor was seen in sections of the peritoneum, diaphragm, omentum, liver and lymphnodes.

Sections of the small bowel contained dense tumor growth along the mesenteric attachment. Here and also in the peritoneum were many small tumor thrombi.

Necropsy findings:

1. Primary carcinoma of the stomach.
2. Metastasis to the lymphnodes, mesentery, peritoneum and liver.
3. Obstruction of the jejunum.
4. Ascites.
5. Dehydration and Emaciation.

SUMMARY

This carcinoma was peculiar in its behavior in that it did not metastasize to the liver more. The reason is impossible to give since we know so little about the conditions that bring transplants about. We can see, however, that the tumor extended through the stomach wall into the mesentery, broke through the serosa and seeded the entire peritoneal cavity. Somewhere there was evidently an invasion of the mesenteric artery which was the source of the extensive transplants along the mesenteric attachment of the bowel. This tumor growth no doubt impeded absorption from the bowel. The peritoneal fluid is exudative and not the result of circulatory stasis. The palpable mass in the abdomen was undoubtedly the thick, firm omentum.

DR. W. N. ANDERSON: I have been checking up on the shifting of fluid in the abdomen and I find that fluid shifts easily with position and gives a flatness in the flanks in two conditions, tuberculosis and carcinoma of the peritoneum. Instead of being a horizontal line there is a tympanitis which goes down into the right fossa. If the fluid accumulates in still greater quantities you will find that the area of flatness remains the same.

DR. DUNN: Dr. Miller, can you enlighten us on the crepitation felt over the mass?

DR. MILLER: The emphysema was still present at postmortem. I have no way to explain it. It did not come from the bowel I am sure.

DR. DUNN: If the tumor had been found on first examination one would have gone immediately to the diagnosis of carcinoma. If we had known that tumor was present early things would have been easy. The evidence pointed to this tumor being present only about 24 hours prior to death.

DR. BRIDGES: I favored tuberculosis and, if I saw another case just like it tomorrow, tuberculosis would probably be my first choice.

DR. DUNN: Another interesting point is that nothing was said about the "doughy abdomen" which is so commonly felt in chronic peritonitis of tuberculous or carcinomatous origin.

DR. MILLER: I would like to emphasize again that tumors are not toxic. Often patients come to within two or three weeks of death without any toxic signs.

DR. DUNN: This woman was slowly starving to death. Was there anything in the cavity of the uterus to account for the menstrual disturbance?

DR. MILLER: No.

TWO CASES OF TULAREMIA

A. C. BARRY, M. D.,
Norfolk, Nebr.

Tularemia has attracted unusual attention in the middle west during recent months due to its recent invasion of these parts.

It has been known in the west and northwestern part of the United States since 1911. These two cases are the first to be reported from the state of Nebraska, who have received their infection from a native source. Dr. George W. Covey of Lincoln reported the first case but his patient had received his infection in Colorado, from the bite of a fly.

There are four clinical types of tularemia, any one of which may be overlooked or mistaken for other conditions which it may easily similate. The bacillus of tularemia more often involves the lymph glands. An unusual feature of it is that it may gain entrance to the body without an abraded skin area. Tice's Practice of Medicine has recently written up the disease and so far as I am aware is the only book which covers the subject.

Case 1: Mr. H. N. J., male, age 26, presented himself at the clinic, Dec. 18, 1926, four weeks after the primary infection. While dressing a rabbit he cut his left index finger on the sharp point of a broken bone. Twelve days later he had a rise of temperature, ached over all of body and said he felt as though he had an attack of la grippe. The general symptoms subsided in a few days and when he presented himself he had an open ulcerated spot where he had received the original wound. The epitrochlear and axillary glands were enlarged and painful, temperature 100. He was anemic, showed a recent loss of weight and appeared sick and toxic. The glands were incised and a small amount of pus evacuated. About two weeks later it became necessary to incise the subclavicular gland on the same side. His recovery has been rather slow and it has been only in the last month that he has been feeling like his former self. This is a case of the ulcero-glandular type.

Case 2: Mrs. L. R., age 48, female, presented herself, Jan. 5, 1927. Eight days following the dressing of rabbits from which case No. 1 received his infection, complained of fever and acute aching over all of body. Her expression was that, "It seemed that every bone in my body ached." This lasted a few days and gradually subsided. In her case infection had gained entrance through a scratch on the index finger of right hand, which persisted as an ulcer for three weeks. She had a rather diffuse maculo-papular eruption over back of hand and forearm as high as the elbow. The epitrochlear and axillary glands were swollen, but very slightly painful. Recovery was effected in this case without incision of the glands. She had a bilateral conjunctivitis at the same time which was no doubt of the same origin. This quickly subsided by the instillation of 10% argyrol in the conjunctival sac. The patient was quite well in six weeks' time. This was a case of the oculoglandular type.

In both cases the diagnosis was confirmed by blood tests done by Dr. Edward Francis of the U. S. Hygienic Laboratory of Washington, D. C.

MODERNISM

She curled her hair, and powdered her nose,
And dressed herself in transparent clothes;
Then took herself out for a quiet walk,
And the boys all said—for boys will talk—
She's smooth all over as she can be,
We ought to know, for we can see.

—G. O. Remy, M. D.

"One good doctor plus a hospital is equal to not less than three good doctors, minus a hospital."—W. S. Rankin, M. D.

"Although surrounded by quacks and charlatans and engaged in competition with irregular practitioners, the physician continues to be the court of last resort in serious illness."—President Hammond, *Rhode Island, Medical Journal,* Feb., 1927.

A gold award for proposals for strengthening the morale of the nation's workers is announced by Dr. Donald A. Laird, of Colgate University, editor of "Industrial Psychology."

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Note: In case of suit notify secretary at once.

YOUR ANNUAL MEETING

Annual meeting time is almost at hand. May 10, 11, 12, are the dates and the newly remodeled Lincoln Hotel the meeting place.

The program is one of unusual excellence, featuring dry clinics and out-of-state talent in addition to a varied program of talent from urban and rural Nebraska.

This will be the fifty-ninth annual meeting. Surely the association has justified its existence during the passing years: All that the Nebraska profession stands for today is due to this organization.

Membership in the state association is a duty and a privilege. If you are privileged to belong it is your duty to make every effort possible to attend the annual meeting and to take part in its deliberations. Only by so doing can you derive the fullest benefit from membership. An annual meeting of the Nebraska State Medical Association is a free post-graduate course, by and among your friends and neighbors, equal to, if not superior to post-graduate work given in the great cities of the country. You need the contacts, the fellowship, the presentations, the discussoins, the flow of soul.

The officers of the association have made great efforts toward the success of the meeting. Your attendance and active participation in the program will show your appreciation of these efforts.

BASIC SCIENCE BILL BECOMES LAW

The Basic Science Bill passed both branches of the legislature and was signed by the governor. The votes in both houses were overwhelmingly for the bill on final roll call. These results were not, however, brought about without an enormous amount of shrewd, hard work by our campaign committee and our legislative committee, and by the fine cooperation of the profession throughout the state. What has been accomplished is an outstanding demonstration of what the organized profession can accomplish when fully aroused to duty.

THE WASHINGTON A. M. A. MEETING

Physicians going to the A. M. A. meeting at Washington, May 16-20, should remember that in order to get the benefit of the one and one-half fare rate, certificates—not receipts—must be secured when purchasing ticket for Washington. These certificates must be stamped by the secretary and validated by an agent of the railroads before return tickets at one-half fare can be secured.

MEDICAL EDUCATION

Much of interest to the general profession as well as to the medical educator is contained in the preliminary report of the Commission on Medical Education published in pamphlet form in January, 1927. In the introduction we read that "in no other field of education has such a high degree of regulation been developed. Because of the vital importance to every individual that practitioners of medicine be trained in the highest proficiency, strict regulations have been inevitable. While these regulations have been largely responsible for the high character of medical training, they have led to much rigidity which is now widely believed to be undesirable and confining to an extent which handicaps the application of sound methods of education." "Growing dissatisfaction with the present situation" is the expressed opinion of the American Medical Association, of the Association of American Medical Colleges and of the Federation of State Medical Boards. In the hope that "universities might be given greater freedom in their endeavor to modify the rigid, over-crowded and over-standardized curriculum and to conduct medical training along more sound educational lines", the American Medical Association appointed a commission in 1924 to make a study which might evolve a basis for action on the part of those immediately charged with the responsibility of medical education. In this and succeeding numbers of this Journal it is proposed to present a brief of the report of the commission.

A questionnaire was sent to all medical graduates of the classes of 1915-1922, inclusive, who were in general practice in communities of 50,000 or less inhabitants—this in twenty-four states of the union and in two provinces in Canada.

An analysis of the returns from this questionnaire brings out many interesting data. We learn that general practice consists of the following:

Office	55%
Home	35%
Hospital	10%
	100%

Seventy-five per cent of the office visits were for minor surgery, upper respiratory infections, general medical and venereal diseases; and 90% of the home visits were for infections of the respiratory tract, general medical and minor surgery while 55% of hospital visits were for surgical cases, 30% for medical diseases and 15% for obstetrics. It is noted that the majority of illnesses seen by the general practitioner are easily diagnosed and require rather simple treatment. The following is a summary of the conclusions derived from the questionnaire:

"Most of the illnesses are not difficult of diagnosis or treatment and probably 90% can be cared for by a competently trained practitioner with modest equipment and facilities.

"Economic condition of patients and their families frequently handicaps and modifies care and treatment, particularly in the serious illnesses.

"There is considerable variation in the severity of a given illness and in the reaction of different patients, which must be considered.

"In every medical problem there are human and psychological factors, an understanding of which is frequently essential for proper diagnosis and treatment of the patient.

"Over 90% of the illnesses are of types which cannot be controlled on a community basis but are problems of individual patients. Less than 10% are diseases against which public health efforts are mainly directed. This fact is an index of the growing efficiency of public health efforts and also emphasizes the necessity of treating the patient as well as the disease.

"Practitioners are doing relatively little health advisory work with individuals who are not ill: i. e., such work as regulation of infant feeding, correction of physical defects, advice in personal hygiene and in family health matters—pain, insomnia, shortness of breath, accidents, malaise, fatigue, cough, diarrhea, abdominal distress, etc. —not for health advice.

"In the larger cities probably 20-25% of the population who seek ambulatory medical attention receive a part or all of it in the organized clinics and out-patient services.

"The common causes of disabling illnesses and absenteeism correspond closely with 80% of the combined office and home visits of the general practitioner.

"Mortality rates vary widely for different disease groups and throw little light on the incidence of illness and incapacity. Morbidity rates are far more significant in the study of the health conditions of a community".

—Palmer Findley.

GALL-BLADDER DISEASE

To Rous and McMasters and to Graham and his co-workers as well as to others we owe a large part of our present day knowledge of the function of the gall-bladder and of the pathogenesis of its disturbances. Indirectly to Meltzer and Lyon, in their attempt to establish the reciprocal innervation between the gall-bladder and the so-called sphincter of Oddi with non-surgical drainage of that organ, much credit is due. Whether or not the gall-bladder actively contracts is doubtful. Apparently it does, at times, collapse. It is not even established that there is a true sphincter at the opening of the common duct into the duodenum. Lyon, if he has done nothing more, has focused attention on the physiology and pathology of the biliary tract and has stimulated interest in the investigation of that system.

It seems fairly well established on a pathological basis that the great majority of cases of gall-bladder disease develop by lymphatic extension from the liver and are secondary to a hepatitis. The more or less common association of duodenal ulcer with cholecystitis or gall-stones may be explained by the intimate lymphatic connection between the first portion of the duodenum and the gall-bladder. It is even possible to link pancreatitis with gall-bladder disease in the same manner. No one would deny, however, that in a minority of cases either cholecystitis or pancreatitis may be hematogenous in origin. That gall-bladder disease may develop from infected bile seems doubtful. Many years ago Cushing showed that a normal gall-bladder mucosa would not succumb to infected bile.

Nothing that has been said above is in contravention to well known clinical facts including the observation of frequent development of gall-stones following pregnancy. Modern physiologists look upon the gall-bladder as a concentrator rather than as a reservoir of bile. It will be seen that the concentration of bile containing an excess of cholesterin such as is frequently found in pregnancy may well account for gall-stones with little accompanying gall-bladder disease as is often seen in parous women.

The exact value of cholecystography in the early diagnosis of gall-bladder disease remains to be established. Graham has shown only a 3% error in cases coming to operation. Those dyes that will at the same time give liver function values may at least help to prove the common association of hepatic and gall-bladder disease. That visualization of the gall-bladder will ever attain the diagnostic value of gastrointestinal radiography seems improbable. We will be grateful, however, for any diagnostic or therapeutic aid in diseases as common and yet as inaccessible to commonly applied laboratory aids as those of the gall-bladder.

After the appendix, the gall-bladder is the commonest extra-gastric cause of organic dyspepsia. It should be realized that the earliest manifestations of the disease do not present the classic text book picture of pain in the right upper quadrant, usually with a colic, referred to the shoulder blade. Antecedent to this the symptoms are largely non-localizing and are apt to be dismissed as unworthy of thorough investigation which would develop proper classification.

Apparently that great field of the effect of sympathetic dysfunction on visceral disease as applied to the gall-bladder remains unexplored. In civilized man there is a constant effort on the part of the cerebrospinal axis to dominate the autonomic system which regulates the abdominal viscerae. That this has been more or less successful is shown by the prevalence of functional visceral disturbance which may be, in turn, the basis for organic disease. Experienced surgeons realize that there is hardly a surgical condition that arises in the abdomen that may not, for a time, be mimicked by a purely functional disorder. It is only the tyro who hastens to his scalpel at every abdominal colic. However, the internist should recognize the essentially surgical nature of gall-bladder disease. While it is only a part of a picture involving more or less the whole biliary tract it is that part which disables the sufferer and which can be permanently relieved only by surgical measures. On a rational basis an inflamed gall-bladder demands removal as surely, though usually not as urgently, as does an inflamed appendix.

—J. W. Duncan.

THE PLAINTIFF'S VOLUNTEER MEDICAL WITNESS

Every malpractice suit is potentially new medical jurisprudence.

The more cases that occur the greater the probability of some new question arising and the pronouncement of new law, in the form of a judicial opinion, which may affect the entire medical profession.

Liability insurance does not protect the individual physician or the medical society from this possibility.

Insurance compensates for some of the loss sustained and helps defray the costs required to properly safeguard the profession in the courts.

In practically every case the petition and the outcome of the suit depends upon volunteered medical opinion.

This Assistance is Invariably Secret.

Since time immemorial it has been the unwritten law of the profession that one physician shall not voluntarily testify against another in a malpractice suit. Of the two offenses, volunteering testimony and secret assistance, secret assistance is the more reprehensible, yet no organized effort has been made to prevent it.

The volunteering of medical opinion in order to incite or sustain a malpractice suit against a physician is prejudiced and rarely, if ever, justifiable.

This should be so defined in our code of ethics.

—Czar Johnson, Medico-Legal Defense Com.

THE RELATION OF SUBPERITONEAL FAT TO ABDOMINAL HERNIA

In an article read before the Minnesota State Medical Society on May 19, 1926, Dr. C. A. Roeder, Omaha, discusses the role of subperitoneal fat as a frequent etiological factor in the production of hernia through the various natural openings leading through the external boundaries of this fatty tissue. This is the first article which has placed this fatty abdominal layer as a frequent factor in the production of all of the various hernias through the abdominal and pelvic walls, and to any one interested in abdominal and pelvic hernias, the original article should be read.

Roeder states that all forms of hernia are due in order of importance, to (1) weakness of support; (2) pressure from within; and (3) traction from without; and states that the various types of abdominal and pelvic hernias are described according to the openings through which they occur, viz: (1) internal inguinal ring; (2) Hesselbach's triangle; (3) femoral canal; (4) obturator foramen; (5) greater and lesser sciatic foramina; (6) pelvic floor; (7) superior and inferior lumbar triangles; (8) vascular perforations of the linea alba and linea semilunaris; (9) atrophic areas in the transversalis fascia, lateral and linea semilunaris; (10) abdominal wounds; (11) umbilical ring, and (12) the abdomino-thoracic diaphragm.

Here are twelve points of potential weakness through which hernias may occur, and through all but two, viz: The umbilical ring and the diaphragm subperitoneal fat herniates. There is no subperitoneal fat beneath the diaphragm and none beneath the umbilical ring.

Roeder speaks of three distinct types of hernias on three distinct stages in the same herniating process, viz: (1) a hernia of subperitoneal fat without the adjacent peritoneum; (2) a hernia of subperitoneal fat and adjacent peritoneum (sac) only; and (3) a hernia of subperitoneal fat, adjacent peritoneum (sac) and a portion or all of an abdomino-pelvic viscus. It is essential to understand this part of this presentation of this subject in order to grasp the role of subperitoneal fat in abdomino-pelvic hernias.

The recent literature upon subperitoneal fatty hernias, e. g. epigastric hernia, would lead me to believe that about 1914 was the earliest observation upon this subject. Roeder, in his historical sketch, brings out the interesting data to the effect that Ambrose Pare in 1564, Morgagni in 1704 and Scarpa in 1809, described epigastric and inguinal fattay hernias as completely as they have ever been described to date.

Fatty inguinal hernias he states do not exist. The so-called fatty hernias in this region are masses of subperitoneal fat, probably enlarging, which were deposited there during the formation of the scrotum. In order to grasp this point, the embryology of this region clears this up nicely. The scrotum is merely a pinched-off portion of the lower abdominal wall which is lined by peritoneum before the scrotum was formed. Before the testicle descends, the scrotum has already been formed, lined by peritoneum and subperitoneal fat, or subperitoneal areolar tissue, which forms the deposition of fat. Therefore, the tunicae vaginales of the cord and testicle, being nothing more than peritoneum, preceded the testicle and cord. This, Roeder states, is shown in exploring undescended testes, at which time the so-called sac is generally found extending below the testicle. The so-called fatty hernias, therefore, are nothing more than masses of subperitoneal fat deposited there before the testicle reached the scrotum. In exploring the inguinal canal all inguinal herinotomies, fat attached to the cord is very commonly found and must be looked upon as normal. As in all the other abdomino-pelvic hernias, excepting diaphragmatic and umbilical, subperitoneal fat generally preceeds the peritoneum. In some inguinal hernias subperitoneal fat, originally above the internal ring, may force its way through and drag a sac after it. This is very unusual except in sliding hernias of the sigmoid. Roeder feels that subperitoneal fat is the main factor in the production of these so-called sliding hernias of the sigmoid.

His article is extensively illustrated and in order to obtain a more generalized conception of subperitoneal fat and its role in hernias, the original contribution should be read. It is printed in Minnesota Medicine for August, 1926.

PLAIN SPEAKING

Is there anything that is more unpleasant than sitting in an audience chamber, large or small, and having some man get up and mumble a speech, of whatever sort, failing to open his mouth, failing to give a clearness of enunciation and to use a proper carrying voice? This question is very properly raised in an editorial which recently appeared in the *Journal Lancet*. Our judgment is that thousands of physicians who constantly attend the meetings of our many societies would, if opportunity offered, answer with a thunderous *No!* 'Tis a "worrisome" thing to be forced to walk with a nail or a gravel in the heel of one's shoe, but it's far worse to sit and strain one's ears trying to understand the mumbling of men who are supposed to be saying something worth hearing but cannot be heard. There are too many mumblers "on the program" at our medical meetings; too many who tuck their heads into their vests; too many who talk to the floor or to the curtain; too many who can't or won't talk to be heard.

The members of our medical societies go to their meetings to get information. Those who accept assignments on programs thereby contract to give worthwhile information. They should give it so that it can be heard and understood.

Let us have plain speaking!

—Am. Med.

IRRADIATION OF VESICAL NEOPLASMS BY REMOVABLE PLATINUM RADON SEEDS

An improved method of treating neoplasms of the bladder by means of Removable Platinum Radon Seeds is described by Dr. Joseph Muir, *Jour. Urology*, January, 1927, XVIII, p. 53.

Using the Removable Platinum Radon Seed it is possible to obtain scientific accuracy of the dosage delivered. Radiation is directed not only to the growth istelf, but to the tissue surrounding it, in order to catch the mitotic cell. The placement of the radioactive units is made so that the "zones of potential tissue change" from each source, do not overlap. The "zone of potential tissue change", or the amount of tissue that one seed can take care of when implanted alone, and also when two or three centers are used, so that intervening cells are subjected to cross firing, is described. The theoretical expose has been proved by clinical results.

Using the Removable Platinum Radon Seed not only are we able to deliver accurate dosage, but because of the platinum screenage all caustic rays are eliminated and necrosis and sloughing with intense shock to the patient obviated. The fact that Platinum Radon Seeds are easily removed through the cystoscope after the required amount of radiation has been delivered makes this the method of choice since no foreign body is left in tissue after treatment.

The technic of application is fully described and illustrated. A point of great importance in using the Removable Platinum Radon Seeds is that after the first seed has been implanted through the cystoscope, its thread protruding from the portal of entry of the seed in tissue serves as a landmark and guide for the placement of successive seeds, so that the accuracy of placement of seeds through the cystoscope is greatly increased. Also, should a seed be incorrectly implanted, it may be removed and reimplanted.

In view of the highly simplified technic as described, the treatment of vesical neoplasms by implantation of Removable Platinum Radon Seeds can be accomplished with as much scientific accuracy as any other urologic procedure.

THE WESTERN ASSOCIATION OF PHYSICAL THERAPY

The Ninth Annual Meeting of the Western Physiotherapy Association was held at Hotel President, Kansas City, Mo., April 8 and 9, under the presidency of Dr. Lynne B. Greene of Kansas City. The program was the best ever presented in the history of the association. Dr. William Benham Snow, pioneer physiotherapist, and his wife, Dr. Mary Arnold Snow, were guests of honor at the Good Fellowship dinner on the evening of April 8. The name was changed to the Western Association of Physical Therapy and the annual dues were reduced to $4.00 per year. Prominent among those appearing on the program were Drs. A. R. Hollender and Henry Schmitz, Chicago; A. David Willmoth, Louisville; Miles J. Breuer, Lincoln; Joseph E. G. Waddington, Detroit; R. W. Fouts, A. F. Tyler, Omaha; J. C. Elsom, Madison, Wis.; Edwin N. Kime, Indianapolis; Burton B. Grover, Colorado Springs; Frederick L. Wahrer, Marshalltown, Iowa; and Leonard A. West, Des Moines, Iowa. Dr. Joseph E. G. Waddington, Detroit, was elected president.

EDITORIAL PARAGRAPHS

Always look at the Classified Ads in the Journal.

Seven million women are said to be engaged in gainful occupations in the United States.

The Basic Science Bill was defeated in several states, notably neighboring Kansas and Arizona, and passed in Washington.

Between twenty-five and thirty students have suicided in the United States since January first, four-fifths of them being young men.

What is one to think of these ministers, these Holy Men, who busy themselves to get convicted abortionists paroled from the penitentiary?

A typhoid fever epidemic, in Montreal, early in spring, with a morbidity variously given as from six hundred to a thousand, was traced to the milk supply.

The Chicago Medical Society announces Summer Clinics at most of the larger hospitals between June 13 and July 8. Admission will be by card. Registration fee, $10.00.

The last Congress passed a bill making it compulsory on the manufacturer to place "Poison" labels on household packages of lye, ammonia, carbolic acid, oxalic acid, and other caustic substances.

That the colonic tube for high enemata is a delusion has been proven by probably every roentgenologist; but its supposed value has become a part of the folklore and many physicians still believe in its value.

Dr. J. C. Malster, Stromsburg; Dr. G. W. Reneker, Falls City; and Dr. A. S. Main, Loup City, medical representatives in the lower house, gave good account of themselves during the legislative session just past.

It took the Supreme Court of Colorado to decide that an injury to a wooden leg is not a personal injury; that a wooden leg is a man's property, not a part of his person, and that compensation cannot be awarded for its injury.

New ads this month are The Magnuson X-ray Co., The Cornhusker Hotel, and The Medical Arts Building. Remember that the ads make the Journal possible, and do not forget the advertisers in distributing your patronage.

The element of human fallibility was perhaps never more tragically illustrated than in the case of the three Chicago hospital nurses who gave boric acid solution to babies under their care, for drinking water, with fatal result to six babies.

The membership of the A. M. A., March 1, 1927, was 93,882. Are you not proud to be one of that number? If you have allowed yourself to become delinquent in your dues, now is the time to set yourself right. You cannot afford to lose your membership.

Nurses in the operating theatre of the King Edward VII Memorial Hospital, Birmingham, have the distinction of wearing trousers. It has been found out that trousers are much more convenient and more comfortable in that they do not flap about and impede the wearer when at work.

Of the 2,677 physicians whose obituaries were published in the *J. A. M. A.,* for 1926, 728 died of some form of heart disease; 327 of cerebral hemorrhage; 303 of pneumonia; 224 of nephritis and 190 of cancer. The larger number—389—died between 65 and 69 years of age, and 128 reached 85 and above.

The Council on Pharmacy and Chemistry suggests that there may be some disadvantage in the therapeutic dosage with scarlet fever antitoxin in the establishment of a more lasting immunity. It may turn out that the combating the actual disease, decreases the security that an attack of scarlet fever almost invariably promoted in former days.

Dr. William E. Musgrave, San Francisco, editor of *California and Western Medicine* and of *Better Health,* died, March 9, of coronary embolism. Dr. Musgrave was, until recently, secretary of the California Medical Association and was an outstanding character in American medicine. He has been pathologist of the School of Science at Manila and later dean and professor of medicine of the College of Medicine and Surgery of the University of the Philippines.

Most of our readers are familiar with Bixby's "Daily Drift" in the *Lincoln State Journal,* and have derived much pleasure and some inspiration from reading the homely philosophy usually signed "Bix". Perhaps not many know that the author, A. L. Bixby, started on a medical career in the late seventies, and after about five years gave it up for letters. We have it from a personal communication that he studied under a preceptor at Fairmont, Minn., nearly three years, acquired a wife, emigrated to the Pawnee Reservation, now Nance county, Nebr., in 1878, where he practiced until the next spring; returned to Sherburn, Minn., where he practiced the summer of 1879; located at North Platte, Nebr., where he engaged in practice from the fall of 1879 to 1881; again returned to Minnesota in hopes of raising enough money for a medical course and entered Rush Medical College early in 1882 for the spring course. During the following summer he received an offer from a newspaper man in Austin, Minn., so alluring he could not afford to decline it and this started him on his career as columnist. He is the oldest columnist in the United States today—and none is better.

TENTATIVE PROGRAM, ANNUAL MEETING, NEBRASKA STATE MEDICAL ASSOCIATION, LINCOLN, NEBRASKA

May 10, 11, 12, 1927, Lincoln Hotel

May 10, A. M.

1. Aberrant Appendicitis....A. I. McKinnon, Lincoln
2. Typhoid Vaccine Treatment, Multiple Sclerosis.. ....A. E. Bennett, Omaha
3. New Classification of Goitre..C. A. Roeder, Omaha

4. Treatment of Scarlet Fever With Antitoxin........................... E. V. Wiedman, Lincoln
5. Anatomy and Surgical Problems of the Hand........................... R. Russell Best, Omaha

May 10, P. M.

Symposium on Gall Bladder

1. Etiology and Pathology...E. T. Bell, Uni. of Minn.
2. Symptoms..................J. M. Mayhew, Lincoln
3. X-ray Treatment..............Roy Fouts, Omaha
4. Medical Treatment......C. P. Fordyce, Falls City
5. Surgical Treatment.......G. B. Dent, North Platte

May 11, A. M.

1. Achlorhydria in Diabetes.......................Michael Wohl & H. Jahr, Omaha
2. Obstetrical Problems in Rural Practice.................H. E. Harvey and D. G. Hughes, Fairbury
3. Prophylaxis of Old Fogyism.....H. Gifford, Omaha
4. Treatment of Fractures.............................J. E. M. Thomson, Lincoln
5. Otolaryngology in Periodic Health Examinations........................... H. B. Lemere, Omaha

May 11, P. M.

1. Surgical Address...........D. Steenburg, Aurora
2. Gall Bladder......Dr. Thomas Casey, Butte, Mont.
3. Tuberculosis.....Dr. Ralph Matson, Portland, Ore.
4. Am I My Brother's Keeper?..Morris Nielsen, Blair
5. Treatment Diabetes..........F. G. Rogers, Lincoln

May 12, A. M.

Dry Clinics

(Detailed Program will be furnished at the meeting).

May 12, P. M.

1. Address on Medicine......H. J. Wertman, Milford
2. Symposium—Diseases of the Chest:
    Etiology..........Earl Farnsworth, Grand Island
    Symptoms...................Geo. Covey, Lincoln
    Medical Treatment......W. N. Anderson, Omaha
    Medical Treatment in Children..............................Harry Berger, Kansas City
    Surgical Treatment..C. F. Hegner, Denver, Colo.

ATTENTION, WOMEN PHYSICIANS!

The Nebraska Association of Medical Women will hold their semi-annual meeting during the time of the Nebraska State Medical convention.

Dinner, followed by program, at the Lincoln Hotel, May 10, 6:30 p. m.

Plan to attend, as our national association has a special message for us.

Following is the program:

Diathermy in Gynecology...Dr. Charlotte Seiver, Fremont
Marriott's Course in Pediatrics..Dr. Rachel Cooper, Aurora
Acrodynia..................Dr. Ada Platz, Beatrice
New Things in Medicine..Dr. Daisy Hanson, Lincoln
Ethylene-Oxygen Anaesthesia ....Dr. Hulda Oelenberger, Lincoln
Impressions of European Clinics...Dr. Nora Fairchild, Omaha

—May L. Flanagan, Pres.; Ruth A. Warner, Sec.

WOMAN'S AUXILIARY OF THE NEBRASKA STATE MEDICAL ASSOCIATION

Mrs. Clarence Rubendall, president of the Woman's Auxiliary of the Nebraska State Medical Association, spent part of the first week of April in Lincoln, completing arrangements with the committees in charge of the annual meeting.

The following interesting program is promised:

Tuesday Afternoon, May 10

Tea at the home of Dr. R. L. Smith.

Tuesday Evening

Entertainment by University Players at the Temple Theatre.

Wednesday Noon, May 11

Luncheon at the Lincoln Country Club.

Wednesday Evening

Banquet of the Nebraska State Medical Association.

Thursday Morning, May 12

Motor drive about the city ending with a visit to the new state capitol.

Mrs. F. P. Gengenbach of Denver, Colorado, president of the Woman's Auxiliary of the American Medical Association, will be the guest of honor throughout the week. Mrs. Gengenbach will address the auxiliary at the Wednesday luncheon.

ALPHA OMEGA ALPHA

The following senior students in the University of Nebraska College of Medicine have been elected to membership in Alpha Omega Alpha:

George W. Ainlay	Farnam, Nebraska
Donald E. Burdick	David City, Nebraska
Clifford V. Morgan	Elmwood, Nebraska
Harry M. Murdock	Omaha, Nebraska
Charles L. Nutzman	Fairbury, Nebraska
Edward H. Stahly	Milford, Nebraska
Richard A. Steere	Sheridan, Wyoming
Joseph S. Swoboda	Omaha, Nebraska

Alpha Omega Alpha is an honorary medical fraternity, chapters of which have been established in the twenty-six leading medical colleges of the United States. The chapter at the University of Nebraska was established in 1914. Election to membership is based upon the scholarship record of the student throughout the four years of his medical course.

A dinner and initiation for the new members is planned during the first week of May. Dr. Walter L. Bierring of Des Moines, Iowa, who is the national president of Alpha Omega Alpha, will be the honor guest and speaker of the evening.

JOINT COMMITTEE MATERNAL WELFARE

American Association of Obstetricians, Gynecologists and Abdominal Surgeons: Dr. Henry Schwarz, Dr. George W. Kosmak, Dr. George C. Mosher.

American Gynecological Society: Dr. W. C. Danforth, Dr. Frank W. Lynch, Dr. Fred L. Adair.

American Child Health Association: Dr. Robert L. DeNormandie, Dr. Ralph W. Lobenstine.

State Leaders: Illinois, Dr. Joseph L. Baer; Iowa, Dr. Floyd Rice; Nebraska, Dr. Earl C. Sage; Wisconsin, Dr. Carl Henry Davis.

To the secretaries of county medical societies:

Gentlemen:

The Joint Committee on Maternal Welfare again asks your co-operation. This country still loses each year nearly 20,000 women, nearly all of whom are young, from the complications of pregnancy and the accidents of labor. Probably 85% of these deaths are preventable. For this prevention great obstetric skill and judgment is not always needed. In most cases simple prenatal care, careful asepsis and a reasonable knowledge of obstetrics would suffice. It is the mission of this committee to try to decrease this mortality. Will you please help us by including in the programs of your society papers on prenatal care, the management of common obstetric problems? In most instances these may be provided by your own members. The appalling number of lives which still are lost from eclampsia and sepsis prove that too many men are not thinking about these things.

We have in each state a state leader. The leader for your state is indicated upon this sheet. He will be glad, when he can, to help you secure some one to discuss these matters before your society. He is limited by the number of men he can obtain who can serve as speakers and by lack of funds, but will do what he can.

We shall appreciate your help in this matter greatly.

Very truly yours,

W. C. DANFORTH, Evanston, Ill.

THE SOCIETIES

Omaha-Douglas County Medical Society meeting, March 22, 1927, was called to order by Dr. Frank Conlin.

Secretary Sage read brief biographies of Drs. E. J. Updegraff and Jas. S. Foote.

Case Report—Carcinoma of the Body of the Uterus With Invasion of the Periuterine Structures by Direct Extension and Metastasis to the Bones of the Skull and Pelvis by the Hematogenous Route, presented by Dr. A. F. Tyler, with pathological specimens and x-ray picture (to be published). Dr. B. C. Russum gave the findings on post mortem.

Dr. Lemere moved that the society extend a vote of thanks to the owners of the building for the work done on the acoustic properties of the auditorium. Seconded and unanimously carried.

Dr. H. B. Lemere read a paper on "Streptococcic Sore Throat". (To be published).

Dr. A. J. Meyers discussed the paper from a bacteriologist's standpoint. Drs. Kulley, Potts, Keegan and Wohl participated in the discussion.

Dr. J. M. Banister read a paper on "Ocular Indications in Obstetric Practice." (To be published). Discussed by Dr. Sage.

Dr. Banister also mentioned a case of carcinoma of the kidney which had metastasized to the bones of the skull, much in the manner of the case presented by Dr. Tyler. Findings at operation presented by Dr. Keegan.

At the regular meeting of April 12, Drs. A. E. Bennett and J. J. Keegan presented a case report of a case of Subdural Spinal Cord Abscess With Good Functional Recovery Following Operation, having the patient on the platform. Paper discussed by Dr. G. A. Young. Dr. B. C. Russum, Types of Meningitis and Cases With Slides and Specimens; Dr. A. J. Miller, Liver Pathology With Its Relation to Functional Tests, Slides and Specimens; Dr. A. S. Rubnitz, Vaccine Therapy; Dr. F. W. Niehaus, Basal Metabolism; Dr. M. G. Wohl, Fungus Diseases (with illustrations); Dr. Myers, Pitfalls in Laboratory Diagnosis.

—Earl C. Sage.

The **Madison - Stanton - Pierce - Antelope Counties Medical Society** met at the Hotel Norfolk, March 22, about fifty physicians, dentists and their wives, being present at the dinner preceding the program. The guests of honor were Dr. B. F. Williams, Lincoln, psychiatrist, who gave an illustrated lecture on the Classification of Mental Diseases, and the inimitable Dr. A. L. Bixby, "Bix", of the Lincoln State Journal. Mrs. Clarence Rubendall, Omaha, president of the Woman's Auxiliary, and Mrs. S. A. Preston, Fremont, treasurer of the same organization, were also present and spoke at an Auxiliary meeting after the dinner.

"Bix" reported the meeting for the Lincoln State Journal:

"In union there is strength, also progress. With this thought in mind the physicians of Madison, Pierce, Antelope and Holt counties organized a society which meets in Norfolk every so often for a short session of physical and mental refreshment. After the dinner, no unimportant part of the progress, a member of the association or a substitute from the outside gives a talk or paper on a live topic of interest to the profession, followed by general discussion of 'the merits of the case' and always a profitable interchange of ideas and opinions.

"Such a meeting was held last Tuesday night where after the banquet at the new hotel, where the wives of the doctors were guests, Dr. B. F. Williams gave an illuminating talk on the varied phases of mental deviations from normalcy and of the newer and more encouraging methods of treating these unfortunates once thought to be hopeless because 'obsessed' and not amenable to mortal efforts in their behalf.

"It was my pleasure to be present by invitation, and for the night the guest of the superintendent of the hospital for the insane, and I want to say that if there is anything in a pleasant environment and humane care in the restoration of the mentally unbalanced, the percentage of recoveries from this hospital should be very high.

"Attendance at the banquet was my happy privilege where I met so many doctors and such a variety of names that the latter became a composite and I can scarcely remember one from the other.

"It was my happy privilege to divide time with Doctor Williams and tell the physicians a few things I thought they ought to know, none having the remotest reference to the practice of medicine. It, however, occurred to me to admit that Doctor Williams had kept me under "mental" observation for the past three years, and had encouraged me on the bus ride up from Lincoln, that if I maintained the ratio of loss for another year, I would be eligible by that time as a night watch on the Lincoln police force."

The meeting of April 18, at the same place, following a dinner, was in charge of a committee of dentists and Dr. J. A. Bliss, Sioux City, discussed the "Correlation of Medical and Dental Diagnosis With Illustrative Case Histories".

The **Twelfth Councilor District Medical Society** met at the West Nebraska Methodist hospital, Scottsbluff, March 11, with about 35 physicians present. Dr. E. E. Griggs, Scottsbluff, read a paper, "Cesarean Section, With Some Case Reports"; Dr. George M. Anderson, Cheyenne, executive officer, Wyoming Department of Public Health, gave an address, "The General Practitioner and His Relation to Public Health". The West Nebraska Methodist Hospital served a dinner, following which Dr. F. W. Plehn, Councilor, discussed several of the problems of the profession. The Scottsbluff County Medical society presented with their compliments a moving picture on pulmonary tuberculosis.

Dr. A. L. Cooper, Scottsbluff, was elected president, and Dr. T. E. Riddell, secretary-treasurer.

The **Johnson County Medical Society** met at Tecumseh, March 23, under the presidency of Dr. G. J. Rubelman. A dinner at the Hopkins hotel was the opening feature.

Dr. C. C. Conlee, of Cook, gave a paper on "Intravenous Therapy Applicable to the Practicing Country Physician".

Dr. A. B. Anderson, Jr., Pawnee City, "Angina Pectoris and Coronary Thrombosis."

Dr. F. W. Buckley, Falls City, "A Case of Glioma".

The **Otoe County Medical Society** met April 11th in Nebraska City with a program designed to be of interest to both the dental and medical profession.

Dr. E. W. Rowe presented a paper on X-ray Diagnosis. (To be published).

Dr. Martha MacVean of Nebraska City read a paper on Vincent's Angina. Both these papers were very well received by those present.

The **Richardson County Medical Society** held its regular meeting April 6 at Humboldt after a dinner at the Park Hotel. This society acts on the principle that the home doctor needs to be drawn out as the program will show:

(1) "Children's Health Conferences of Richardson County Medical Society", by Dr. C. P. Fordyce; (2) "Angina Pectoris and Coronary Thrombosis", by Dr. A. B. Anderson, Pawnee City, paper discussed by Dr. Wm. Shepherd, Rulo; (3) "Children's Teeth and Some Common Neglects That May Be Overcome by

the Co-operation of the Medical and Dental Doctors", by Dr. C. B. Arnot, Humboldt, paper discussed by Dr. R. D. Cole, Falls City, Dr. E. R. Hayes, Falls City; (4) "Some Newer Methods in Obstetrics", by Dr. F. A. Nelson, Humboldt, paper discussed by Dr. H. R. Mincr, Falls City; (5) "Bladder Diverticulitis With Case Report" by Dr. C. L. Hustead, paper discussed by Dr. N. H. Blakeley, Humboldt.

HUMAN INTEREST TALES

Dr. A. C. Graham, formerly of Bloomington, has located at Nemaha.

Dr. C. G. Moore, Fremont, was elected mayor at the spring election.

Dr. H. S. Tennant has become associated with Dr. S. G. Allen, Stanton.

Dr. S. A. Cassady, formerly of Beatrice, has located at Shenandoah, Iowa.

Dr. I. L. Smith, Syracuse, who was ill for some time, has resumed practice.

Dr. and Mrs. L. R. Burlingame, Omaha, are planning a trip to Hawaii in June.

Dr. S. B. Wolbach, Boston, visited his father who was ill at Grand Island, recently.

Dr. E. G. Johnson, Grand Island, has gone to England, Germany and Austria for study.

Dr. R. E. Roche, Sidney, underwent an operation for gallstones in Omaha a month ago.

Dr. J. B. Stutzman, Moore, Mont., a pioneer physician of McCook, visited in Nebraska in March.

Dr. H. M. McClanahan returns to Omaha, May 1st, from his winter trip to South America and Africa.

Drs. John P. Williams and D. D. Sanderson, Lincoln, have opened a new office in the Funcke building.

Dr. Nora Fairchild, Omaha, has returned from a seven month's trip overseas for special study on the eye.

Dr. and Mrs. I. C. Wood, Omaha, have returned from a three months' stay in Honolulu and Los Angeles.

Dr. J. S. Goetz, Omaha, has been alarmingly ill with pneumonia and complications, but is now recovering.

Dr. Laura Brown of Glendale, Calif., visited in Lincoln in April, and was the house guest of Dr. Margaret Hammond.

A twelve to fifteen bed hospital is about to be opened in Plattsmouth, a large private residence being equipped for the purpose.

Dr. B. J. Babcock has been appointed one of the assistant physicians at the Hastings State Hospital, vice Dr. T. D. Burgess, resigned.

Dr. Alfred Schalek, Omaha dermatologist is to be the guest of the Kansas Medical Society, at its annual meeting at Hutchinson, May 4th.

Among Nebraska men on the program of the A. M. A. at Washington are Drs. J. E. Summers, J. P. Lord, J. A. Henske, Omaha; A. I. McKinnon, H. W. Orr, Lincoln.

Dr. M. E. Kilpatrick, Fullerton, has relinquished his practice and has taken a position in Johns Hopkins University, where he will get training in mental and nervous diseases.

Dr. J. A. Henske, Omaha, will read a paper before the American Medical Association at Washington, on "The Importance of Pediatric Care in Operative Treatment of Hairlip and Cleft Palate".

Friends of the veteran Dr. D. C. Bryant, former Omaha oculist, now resident of Claremont, Calif., will be interested to know that he has recently returned from a trip to Australia and the South Sea Islands.

Dr. W. D. Guttery, Bolivar, Tenn., formerly in institutional work in Nebraska, was reported alarmingly ill in his Tennessee home recently. He has been connected with the West Tennessee Hospital at Bolivar.

Dr. Lydia Schaum, returned medical missionary from Pekin, China, has been lecturing in the state. Dr. Schaum is a native Nebraskan, her parental home being Eustis, and is a graduate of the University of Nebraska College of Medicine.

The David City hospital, an institution twenty-five years old, and which has given service to over 5,000 patients, is in financial distress. Unless the community comes to the rescue the institution may be closed.

The state board of control has announced that Dr. Lawrence T. Sidwell, superintendent of the State Home for the Feeble Minded, Beatrice, will exchange positions with Dr. J. A. Burford, superintendent of the State Hospital for the Tuberculous, Kearney. Dr. Sidwell was in charge of the Kearney institution once before.

A complimentary smoker was given to the senior students of the medical and dental schools of the University of Nebraska and Creighton University at the auditorium of the Medical Arts building, by the medical and dental doctors of Omaha. Addresses were delivered by Dr. H. W. von Schulte, dean of Creighton University College of Medicine and by Dr. C. W. M. Poynter, professor of anatomy, University of Nebraska College of Medicine.

NECROLOGY

A Correction: In the April Journal the death of Dr. Joseph M. Grace, Omaha, was reported, erroneously. The Dr. Joseph M. Grace, of Omaha is living; the death referred to in the obituary was another party. The error is regretted.

Walter H. Vanden, Crookston, Nebr.; Medical College of Ohio, 1895; died March 21, of heart bloc, aged about 54 years.

Perry D. Kelly, Nemaha, Nebr.; Ensworth Medical College, St. Joseph, Mo., 1893; a conscientious and faithful practitioner at Nemaha for 16 years; member of the medical corps, stationed at Camp Dix during the World war; died March 22, after an illness of several months, aged about 56 years.

Andrew Stephenson, Long Beach, Calif.; University of Nebraska College of Medicine, 1896; surgeon in the army during the Spanish War; post surgeon at Fort Robinson and practitioner at Crawford, Nebr., for some years prior to about 1915; practitioner at Long Beach, Calif., the past 12 years; died, the middle of March, aged about 57 years.

Luther A. Powell, Superior, Nebr.; University of Pennsylvania, 1884; veteran physician of southern Nebraska, beginning practice at Superior some forty years ago, later in practice at Hebron and Adams; physician at Soldier's home at Dodge City, Kansas, and at Grand Island, Nebr., during the last ten years; died several hours after a stroke of paralysis, April 3, aged 68 years.

S. B. Lutgen, Brock, Nebr.; resident of Nemaha county for sixty years and for many years the only physician in the county; died about the middle of February, aged 92 years.

Harry Pritchard, Florence, Nebr.; Rush Medical College, about 1880; after a short period of practice at Des Moines came to Wisner, Nebr., where he practiced for some twenty years; for the past twenty years a resident of Florence, Nebr., but not in practice; much interested in music and in charge of the Wisner Band for many years; died of hemorrhage of the stomach, April 13, aged about 73 years.

Edward N. Smart, Madison, Nebr.; Drake University, College of Medicine, 1884; in practice at Humphrey, Nebr., for five years, and since 1895 in practice at Madison, Nebr.; collector of antiques, semi-precious stones, and curios of other kinds of which he left a collection thought to be worth many thousands of dollars; died suddenly of organic heart disease, April 17, aged 71 years.

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THE GOLDEN RULE OF MEDICINE*

H. E. POTTER, M. D.,
President, Nebraska State Medical Association,
Fairbury, Nebraska.

The calling to which we devote ourselves is, as a profession, as old as civilization. The healing art has, like all other affairs related to civilization, progressed by epochs and it is undoubtedly more than sixty centuries, since the healing of the sick became crystalized into a definite profession. Among the early Egyptians this epoch was that of mysticism and its beginning reached far into the dark past. Many centuries elapsed during which the healing art was linked up with religion and the earliest rules for the maintenance of public health are to be found in the early books of the Old Testament. Among the early Greeks the rules for the care and healing of the sick were to a large extent patterned after those of the Egyptians and many of the ideas are found embodied in the Greeks myths. This Greek mythology, growing out of older Egyptian mysticism was, as before, associated with popular religion and represents the final stage in the mystical epoch of medicine.

The Greeks, of all early peoples, were the greatest travelers and from the far ends of the earth they brought information relating to the treatment of the sick. The analytical mind of the Greek correlated as best he could, this information and thus medicine, as an art, had its beginning. Of all those who interested themselves during this period, Hippocrates stands out alone and because of his writings and teachings during the Fourth century B. C., he is known as the "Father of Medicine". Medicine of this period was empirical and an art. He had only a slight knowledge of anatomy, but his observations and teachings laid the foundation for the future of medicine as a science. He taught that the patient should be studied at the bedside, that each one, who was sick, needed a line of treatment suitable to his particular condition. He insisted upon the importance of diet and made many observations along lines; from which the future progress of medicine was to proceed. He was not only a careful observer of symptoms, their relationship to disease and a student of methods of treatments, but also a great teacher and as must all great teachers, he gave to his pupils the ideal of the spirit of the healing art. He insisted that his pupils should enter into professional life with the highest ethical ideals, and to him we owe the formulation of the renowned oath of Hippocrates. By that oath the physician pledged himself to give to those who followed after him the knowledge that he had acquired. He pledged himself to follow the system of treatment, which according to his ability and judgment would be for the benefit of his patient and to abstain from whatever is deleterious or mischievous. He foreswore all harmful methods and resolved to practice for the benefit of the sick; that whatever in connection with his professional practice or not in connection with it, he saw or heard in the life of men, which ought not be spoken abroad, that he said "I will not divulge", recognizing that all such should be kept secret. Those who write history agree that he built, perhaps, better than he knew, for in his teachings are found not only the foundation for the development of the modern science of medicine, but also the ethical principles destined to make the art and practice of medicine stand out, as an example of the modern term altruism. We can only assume, that even in those days, the unprofessional, the quack, the charlatan, were a thorn in the flesh to those who attempted to care for the sick in a conscientious manner. If it were not so, there would have been no occasion for so clear cut a definition of the ideals of medicine or the formulation of the oath of Hippocrates. And so was marked another milestone in the progress of medicine; the formulation of its ideals for future generations and its establishment as an art.

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*President's Address, delivered before Nebraska State Medical Association, Lincoln, Nebr., May 11, 1927.

The thirteenth century saw the rise of the universities with their formal teaching and the classification of medical knowledge from which medicine was to evolve as a science. The development of gross anatomy, the recognition of the relationship of bacteria to disease, the study of pathology or abnormal anatomy, progress of surgery and finally the recognition of functional distubances without gross pathology are all steps establishing the modern scientific side of medicine While medicine could not hold the place it does today without development along these lines, I wish to remind you that were it not for the art and ideals of medicine such a development would have been impossible.

From the days of Hippocrates to the present time, stand out many medical heroes made great, because they were motivated by these early ideals set up for those practicing the healing art. They laid the firm foundation upon which the structure of modern medicine could be built. Perhaps they founded and built better, than they knew, but it is one of the laws of life that those things, which are not sound and right do not endure. Those things which were superficial and false have crumbled away and have been lost from sight. From the days of Hippocrates various cults have arisen. Some under the cloak of religion, some proceeding from a false premise, all without the fundamentals of the true spirit of medicine. None of them have lasted long and I will prophesy that of the numerous cults practicing the healing art today, that within the next generation few, if any, will be in existence. Whatever may be of good in them will have been absorbed and that which is false will have past to its natural end; for their foundations are the sands of charlatanism, and mysticism and they cannot endure for any great period of time. The foundation of real medical practice is the rock of scientific knowledge, brought to those who need its aid, through the efforts of men motivated by the ideals of great teachers of medicine. Built on such a foundation and perpetuated by such a spirit, it cannot fail to remain supreme and progress in the line laid out by our medical forefathers.

The danger, therefore, is not from without, but from within. Let us remember to hold sacred the oath of Hippocrates. Let us stimulate interest in medical science through the activity and growth of our medical organizations. The medical society has been likened to a clearing house, through which every physician of the county, city or state may receive his intellectual rating and through which he will find his own professional assets and liabilities. The medical society must fulfill its great obligation in bringing together medical men and perpetuating the knowledge and ideals of our profession, and unless we can feel ourselves united, as brothers in a common cause, we have lost our bearings professionally and cannot but fail to live up to the possibilities of our opportunities. Let me remind you of Osler's three ideals. They are and always will be sufficient for any of us. First, to do each day's work well and not be troubled about tomorrow's; to settle down to each day's task, as if there were no other. For it is only fair to yourself that you should not try to anticipate that which you do not know, nor to overcome that which you do not face. The second, is to act the golden rule toward all without regard to the action of others. The third, is to cultivate such a measure of equanimity, as would enable you to bear success with humility and to meet defeat and sorrow as befits a man. For our common reflection a fourth is suggested: to keep within our organization the common will and conscience, which governs good medical practice the world over. Never break fellowship with those living or dead, who follow the path pointed out by the father of medicine.

The prophet said of a nation, "Where there is no vision the people perish", and the same judgment will apply to a profession. If we follow these simple ideals we will each stand within the line of professional continuity, one of a firmly cemented fellowship, a personal and valued link in our common world wide organization, whose motives and ideals are above suspicion and whose foundations are the rocks of scientific knowledge.

PROTOZOAN PARASITES IN THE INTESTINE OF MAN

A Report of Twelve Additional Cases Observed in This Locality.

GEORGE W. COVEY, M. D.,
Lincoln, Nebraska.

My purpose in writing this paper is to report twelve new cases having protozoan parasites in the bowel, in addition to the nine cases which were reported in *The Nebraska State Medical Journal* for June, 1926 (9:220). This makes a total of twenty-one cases observed in a period of less than two years. I also wish to study the individual cases sufficiently to extract from them, if possible, such information as will help us to know when to look for this type of infection: i. e., the pathognomonic history or physical findings, if there be any. In addition, something will be said as to treatment of these cases.

Types of Parasites Found: In these eleven cases, *Entamoeba histolytica* was found in six. In four of the six it was accompanied either by *Tetramitus (Chilomastix) mesnili or Lamblia (giardia) intestinalis.* In the other six *Tetramitus or Lamblia* was found as the only example of protozoan infestation.

Arthritic Group: Of the six cases of amoebic infection, four (66 2-3 per cent) presented symptoms predominantly arthritic in character. (See following cases, Nos. 1, 2, 3 and 4). In each of these cases more or less extensive arthritis of the deformans type had been present from eight months to fifteen years.

Case I. (History and findings are as briefly stated as possible, all irrelevant material being omitted). Miss L. C. White. Female. Age 34. Teacher, Native of Nebraska. Seen in consultation with Dr. J. E. M. Thomson at the Bryan Memorial Hospital in May, 1926.

She gave a history of good health to the age of nineteen, when she had diarrhea and weakness for four weeks. This was followed by the onset of arthritis in the left knee. It was six or seven years before other joints became involved, but now practically every joint in the body is involved. Her teeth and tonsils were removed seven years ago. She had one operation, probably only manipulation, on the left knee to correct a contracture. Since that time that knee ankylosed. Other joints retain some motion, except the spine which seems entirely immobile.

Menses: Twice during the fifteen years has had period of amenorrhea for about six months. Now normal.

Blood count shows Hb. 50; RBC 3,590,000; WBC 6,500; P 51; LL 5; SL 44. X-ray shows typical findings of arthritis deformans. Stool examinations were negative for vegetative amoebae, but duodenal fluid contained large numbers of typical Entamoeba histolytica.

Diagnosis: (1) Arthritis deformans. (2) Intestinal amoebiasis (histolytica).

Case II. Mr. R. H. Male. Age 15. School boy. Lives in Nebraska. Has lived in the Philippine Islands. Seen in consultation with Dr. H. W. Orr at the Lincoln General Hospital in September, 1926.

Three years ago, suffered some injury to the back by being thrown from bicycle. Had no symptoms until eight months ago when he found he could not bend his back as much as other boys. This has become progressively worse. Has lost twenty pounds in weight in the past six weeks. Physical examination revealed nothing aside from findings in the spine, as follows. Moderate fixation and muscle spasm. Increase in normal lordosis, lumbar area and fairly marked dorsal rounded kyphosis. X-ray showed marked osteo-arthritis of the spine. He has had measles, whooping cough and chickenpox. One year ago had diarrhoea with fever and abdominal pain diagnosed typhoid, but Widal and Blood cultures were negative. While in the Philippine Islands had amoebic dysentery.

Blood Count: WBC 6,600; P 41; LL 15; SL 36; E 6; T 2. Stool examination shows red blood cells, white blood cells, tetramitus (chilomastix) mesnili and entamoeba histolytica. After treatment with emetine and acetarsone, five warm stools were negative for parasites and the blood count was as follows: WBC 9,200; P. 50; LL 16; SL 26; E 3; B 3; T 2.

Diagnosis: (1) Osteoarthritis of spine. (2) Intestinal amoebiasis (histolytica). (3) Infection with Tetramitus (Chilomastix) mesnili.

Case III. Mrs. I. G. White. Female. Age 65. Widow. Housewife. Referred to me in August, 1926, by Dr. E. B. Brooks.

Eight years of chronic multiple arthritis beginning in shoulders and elbows and finally involving nearly all her joints. The most recent joints to give symptoms are those in the spine, cervical and dorsal. No intestinal symptoms whatever. Tonsils and teeth have been removed within the past seven years and has been repeatedly treated at Hot Springs without any effect on her disease.

Temperature 99.2. Pulse 92. No remarkable findings on examination except the joints, which show typical findings of deforming arthritis. The more acute joints are the left elbow and left knee, the metacarpal-phalangeal joints of both hands and the cervical and dorsal spine.

Blood Count: Hb. 87; RBC 4,240,000; WBC 4,000. Urine analysis, specific gravity 1012, alkaline, trace of albumin, few white blood cells. Stool examination. No parasites. Duodenal fluid shows large numbers of Entamoeba histolytica.

Diagnosis: (1) Arthritis deformans. (2) Intestinal amebiasis (histolytica).

Case IV. Miss E. C. White. Female. Age 36 (?). Technician.

Seen in October, 1926, with pain in right shoulder and ankle. For twelve years repeated attacks of arthritis. First attack in 1914 began in ankle following a sprain. Soon involved other joints. Was in bed five months. Nearly all her joints including temporo-mandibular were involved. She was better for a few months but not real well, then in bed for four or five months more and worse than the first time. She had scarlet fever and arthritis recurred a third time. In 1916 she had chorea and was in bed from February to October. The chorea was accompanied by recurrence of the arthritis. In October, 1916, the tonsils and appendix were removed. She had improvement of the joints from December, 1916 to 1920, when she was again in bed six or seven months with arthritis. This time her sinuses were opened and a submucous resection done. She was said to have a pan-sinusitis. She has been able to be about since then but never free of trouble in the joints. Recently the right shoulder, elbow, and wrist have been more troublesome. X-ray shows bone production. There is some creaking in various joints and deformity in wrists and great toe joints.

X-ray examination of gastro-intestinal tract and teeth was negative.

Temperature 99. Pulse slow and regular. Blood pressure 112/68. The heart shows no enlargement, murmurs or other evidence of disease. The abdomen shows scar of operation and tenderness over the cecum. The spine seems negative. There is some deformity of the middle joints of fingers of right hand. They are silghtly tender. There is tenderness of the right elbow and shoulder. Some heat about the right shoulder and limitation of abduction and rotation. There is tenderness about the right ankle and the right 1st and 2nd metatarso-tarsal joints.

Blood Count: Red cells 4,270,000; Hb. 65% (Dare); white cells 10,700; polymorphonuclear neutrophiles, 50%; large lymphocytes 14%; small lymphocytes 36%. Stool examination shows Tetramitus (Chilomastix mesnili. Duodenal fluid; many Entamoeba histolytica.

Diagnosis: (1) Arthritis deformans. (2) Intestinal amoebiasis (Histolytica). (3) Infestation with Chilomastrix.

The history as related in this case would make one think both the first and second great types of arthritis had been represented, yet there is no cardiac lesion and there is now a productive type of arthritis. There is no evident reason why both types cannot be represented in the same individual.

Results of Treatment in the Arthritic Group: Treatment of these cases as outlined below on the basis of their parasitic infections only, has shown very pleasing results. In case I the progress of the disease seems, after seven months, to be stopped. There is reduction in the size of many joints, cessation of all symptoms of active inflammation and rather striking increase in motion in these joints that were not completely ankylosed.

In case II, there is great improvement in the spine under combined orthopedic treatment and eradication of the intestinal parasites.

In case III some improvement was shown, but did not complete her treatment and she has not been seen for three months; therefore the end result cannot be given.

Case IV is still under treatment and shows satisfactory improvement. Reference to the writings of E. F. Ely(1-2-3-4) of Leland Stanford University since 1920, and of Kofoid and Sweezey(5), shows that over a period of years he and his associates have been making an intensive study of the group of arthritides known under various names, but to which we may refer as arthritis deformans. From paper to paper he speculates as to the real causative factor of the disease. In the pathology in and about the joint he constantly calls attention to small cysts or "aseptic" necrotic areas in the bone marrow just beneath the joint surface. He studied and cultured, in vain, these areas, always pondering on their genesis. Finally entamoeba histolytica were found in the gut of a number of these cases, so he re-cut his sections, staining them with iron hematoxylin and Drs. Kofoid and Sweezey were able to demonstrate bodies in these cavities resembling in every way vegetative forms of amoeba histolytica. Of course, no one is as yet ready to say that entamoeba histolytica causes arthritis deformans nor, even if it is the cause of part of the cases, that it is by any means the only cause. Ely, further, classifies all arthritis excepting tuberculous and syphilitic into two great types which he designates as the First Great Type and the Second Great Type of arthritis. The Second Great Type has for a type species, so to speak, arthritis deformans and is separated clinically from the First by the presence of lipping and spur formation about the joint margin. It is in this Second Great Type that some cases, if not all, may be due to emoebae. Reference to cases I and II in this paper, particularly as regards the results of treatment, shows that they tend, clinically, to support the views suggested by Ely.

Colon Group of Cases—Amoebic: Two cases of amoebic infestation gave bowel symptoms (V and VI).

Of these, one, Case V, is that of a boy, M. K., aged 14, with chronic dysentery for a period of three years. Entamoeba histolytica was quickly identified in warm stools, and he responded rapidly and well to treatment as outlined below.

The second of these, Case VI, is that of a married woman, Mrs. L. D., aged 43, who comes with complaints of bleeding hemorrhoids, pruritis ani, pain in the rectum, and constipation. Also a small tumor in the upper, inner quadrant of the right breast. Complete physical examination was refused, but examination of the anus and rectum revealed moderate irritation of the skin about the anus, two small insignificant hemorrhoidal tabs, no fissures or fistulae. The rectal wall shows no ulceration but mucosa shows patchy redness with injection of the vessels, and there were flecks of mucous here and there. Stool and mucous obtained through the proctoscope showed the presence of amoeba histolytica and Lamblia (giardia) intestinalis. I think it questionable whether the amoebae had any part in producing the presenting symptoms in this case, the flagellate being the more likely etiologic factor, as in the next case, VII.

It should be noted in these six cases, that only two, or one-third the cases, gave much history pointing to the bowel, and only one of those was a case of dysentery; but considering the eleven cases of amoebic infection reported here and in the previous report, cited above, four were arthritic cases and seven were cases with bowel complaints.

Flagellates were found in the stools of nine of these twelve cases. Of these, six were identified as *Chilomastix mesnili* and three as *Lamblia.* In six cases the flagellate only was found, being associated in the other three with *entamoeba histolytica.* These six were numbers VII, VIII, IX, X, XI and XII.

Case VII. Mr. L. D., the husband of case VI, aged 48, comes because of intense pruritis ani with moist eczema over perineum, it having been present thirteen years but much worse now. He has no bowel complaints except that for years he was constipated, having a hard stool that caused pain and faintness when passed. For a year, however, stool daily, soft, unformed, without visible mucous or blood. Complete examination not admitted. Abdomen negative. Skin of perineum all about anus and as far forward as base of scrotum red, thick, scaly, moist and fissured. No true anal fissures, hemorrhoids or fistulas tracts. Mucosa of rectum appears thick, greyish and slightly nodular, covered with flecks of mucous. In patches the vessels are injected. No ulcerations, no bleeding. Stool examination shows giardia; no amoebae seen.

The bowel symptoms in these two cases responded quickly to eradication of the parasites with the addition of x-ray treatments to the perineum.

There has been no argument as to the pathogenicity of the *Entamoeba histolytica* but as to that of the flagellates, many clinicians maintain that they are not pathogenic; in fact, only an occasional writer will admit this probability.

The more cases the writer sees of infection, particularly with *Chilomastix* or *Giardia,* the more secure he feels in the belief that they may and do cause disease. In order to give you the basis for this belief, we will go rather fully into cases VIII, IX, X and XI, four of the five remaining cases; No. XII has not been under observation long enough to determine the results of treatment.

In the previous case reports *(Nebr. State Med. Jour.,* 9:220, June, 1926*),* the following statement is made: *"Chilomastix mesnili* was found in four of the nine and in at least one seemed responsible for a severe and debilitating diarrhoea."

Case VIII. Mrs. J. G. Age 29. Nurse. Came in January 1926, complaining of loss of weight, fag, fever for two and one-half years, coryza, slight nonproductive cough for two or three weeks, small indefinite lump in left breast, sometimes larger and more tender than at others; no bowel disturbance.

Examination revealed pallor, temperature 99.8, low blood pressure, a small piece of tonsil in left fossa, moderate tenderness over appendix, and a small, indefinite, moderately tender mass in the upper, outer quadrant of the left breast, with one slightly enlarged gland in the axilla. Repeated careful examinations of the chest failed to reveal any signs of disease. X-ray of the lungs and sinuses showed both "remarkable clear." Old tuberculin was given subcutaneously. A strong local reaction with additional fever and increased tenderness in the right lower abdomen and left breast occurred. No focal reaction in the chest.

There was a moderate secondary anemia. No other significant laboratory findings. On February 11, 1926, the breast and abdomen were explored by Dr. J. S. Welch. The appendix showed evidence of some chronic inflammation. The breast showed only nonmalignant hyperplasia without definite tumor or inflammation.

Her symptoms persisted and the anemia became much more marked. Finally in July, 1926, after three negative stool examinations scattered over two months' time, the 4th showed flagellates in large numbers, identified as Chilomastix mesnili.

Treatment to eradicate this organism, as outlined below, has cleared up her symptoms. She now reports that she feels well, and repeated stool examinations fail to reveal any more of the organisms.

Case IX. Mrs. H. L. W., age 44. Came in May, 1926, with bleeding from bowels, at first four or five months ago only a day or two at a time but now for two weeks with every stool. She recently passed a large clot. She also has frequent urination, gas in bowels, colic, pain in epigastrium, fag, and has lost about five pounds in weight. She also has pain low in back.

Examination showed temperature 99.6. Tenderness along colon, most marked over the sigmoid. It was also moderately tender in the right lumbar region. Proctoscopic and pelvic examinations were negative.

X-ray examination of the gastro-intestinal tract shows some adhesions with stasis in the colon at point of previous gall-bladder operation, but otherwise negative.

Stool examination reveals Chilomastix mesnili in large numbers, mucus four plus and chemical blood part of the time.

Eradication of the parasites afforded relief from practically all symptoms except certain disturbances which could be attributed to her adhesions and resultant stasis.

Case X. Mr. J. P. Age 18. Student. (A brother of Case VIII above). Came September, 1926, complaining of cough, pain in the back, lack of energy, and slight pyrexia. For four or five years has had cough, sometimes productive. Seems to have constant coryza. He tires easily, is not energetic and sometimes has a frontal headache. He is about seven pounds under his usual weight. No bowel complaints.

For a year has had pain across back at about the rib border every day, not worse on exercise, nor better on resting.

Physical examination shows height 74 in., weight 150 pounds, temperature and pulse normal. Blood pressure 138-144/78. There is some redness of the throat. Heart, lungs, and abdomen are negative. Hands and feet cold and bluish. Back shows some loss of normal lumbar lordosis with considerable rounded kyphosis in the dorsal region. Considerable muscle spasm with tenderness in lumbar muscles. Lower dorsal and upper lumbar areas do not seem to have full mobility. No other findings of importance.

Blood Count: Red cells 5,150,000; Hb. 108%; white cells 8,600; polymorphonuclear neutrophiles 50%; large lymphocytes 9%; small lymphocytes 35%; eosinophiles 5%; transitionals 1%. Urine, single specimen, normal. Stools: Repeatedly show enormous numbers of Chilomastix mesnili.

Case XI. Mrs. M. L. S. Age 32. Referred to me in May, 1926, by Dr. F. F. Teal, because of recurrent corneal ulcers. These have occurred off and on for nine years. Always constipated until about nine months ago when she had diarrhoea for four weeks. Since then the bowels move two or three times a day without a laxative. She is constantly twelve to twenty pounds below her former weight. From August, 1925, to January, 1926, daily fever of 99 to 100. Has been diagnosed as tuberculosis, and Wassermann negative.

Examination revealed, besides her corneal ulceration, tenderness along the whole course of the colon. Lungs and heart negative. Urine negative. Blood shows mild secondary anemia. Stool: Unformed, mucoid, no pus or blood, large numbers of giardia.

Under the usual treatment she became constipated, temperature free, had repeated negative stools and her cornea healed. Four months later her stools were still negative, and there was no return of corneal ulceratiron.

Case XII. Mrs. C. A. Age 32. Seen in December, 1926.

Presenting symptoms are pain in the abdomen, sharp pain in the rectum, and gas in stomach and intestine. Proctoscopic examination reveals a very spastic sphincter ani and passage of the instrument causes considerable pain. The rectal mucosa shows nothing beyond marked redness and patches of congested vessels. Fractional gastric analysis showed low normal acidity and with no free Hcl until the end of one hour. Blood showed moderate secondary anemia. Stools were full of mucous and Chilomastix with no blood.

Treatment has been begun but results cannot be foretold at this time.

Careful observation of these cases has convinced me that the flagellates have been responsible for definite symptoms. In a general way the symptoms seem largely to fall into two groups: Those referable to the rectal region, as in cases VII, IX and XII; and those of a general nature with fag, slight fever, sometimes cough, loss of weight, secondary anemia; in other words, such a group of symptoms as would cause the clinician to search for tuberculosis or some other chronic infection or intoxication.

The Search for the Parasite: Finding these protozoa requires, first that one search persistently, not being content with one or two stools. Occasionally they may be found in the first specimen, but more often several are required. The stools should be examined while still warm, and are best passed in the office. Theoretically, the stool should follow a saline laxative, but sometimes organisms will be found in a formed stool obtained from the rectum. The stool should not be over three or four hours old. One cannot say *Amoeba histolytica* is absent until he has examined the duodenal fluid. Fewer infestations will be missed when we have learned to positively identify the encysted forms of amoebae and the flagellates.

Treatment: In the organic arsenic preparation Stovarsol or Acetarsone, we have an excellent remedy for both the amoebae and flagellate infestations. Usually the vegetative forms can no longer be found after the first three or four days of its administration. It is given in tablets each containing 0.25 gramme of the drug. It has been my custom to give a gramme a day for six days in succession, then one gramme per day two days each week for three weeks, then one gramme per day one day each week for six weeks. This makes a total of 18 grammes over a period of ten weeks.

In the amoebic infections the writer has given first a course of emetine hydrochloride 33 milligrams twice a day for five days, followed by 6 grammes of acetarsone in six days, then a second course of emetine and then resume the regular course of arsenic. Observation of some of these cases over a period of nearly a year after this medication has failed to show the presence of the organisms.

CONCLUSIONS

1. Infection of the human intestine by protozoan parasites, particularly *Entamoeba histolytica*, *Chilomastix mesnili* and *Giardia*, is common in Nebraska.

2. Twelve new cases are included in this report.

3. Six are of *Entamoeba histolytica* infections either alone or with one of the flagellates. Four of the six showed presenting symptoms referable to the joints. The arthritis is of the arthritis deformans type. One was a chronic dysentery case. One, associated with *Giardia*, produced rectal symptoms.

4. Six cases showed infection of the bowels with *Tetramitus (Chilomastix) mesnili* or *Lamblia (Giardia) intestinals.*

5. It is the author's opinion that these organisms, flagellates, may produce disease and that in the cases observed two general types of symptom complexes are shown; one referable to the rectum and lower colon and one general, simulating

tuberculosis or some other chronic infection or intoxication.

6. Careful and persistent search in warm fresh stools, is necessary to find these organisms.

7. Stovarsol (or Acetarsone) and emetine are proficient remedies to be exhibited in these infections.

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SEPTIC SORE THROAT—A CLUE TO ITS ORIGIN

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Three modes of origin, the milk borne infections, infections of the pharynx from a residual tonsillar and adenoid infection, where the tonsils may be carriers and carry in their crypts streptococci, and the direct contagion from a person suffering from infected throat, are given in the literature as the causes of streptococcic sore throat. As epidemics of septic sore throat are not infrequent, and produce, through the blood and vessels, distant infections of the heart, the joints or of otherwise clean surgical wounds, any facts which throw any light on the cause, are of interest to all who engage in the practice of medicine and surgery. A few brief quotations from the numerous articles in the literature will be of interest.

Davis(1), in a study of the throats of healthy students, found cultures taken at short intervals, sooner or later, reveal the presence of hemolytic streptococci. The cocci, as revealed by throat swabs, are not numerous, far less than in the crypts of tonsils and adenoids.

Colmean and Wheeler(2) state that in an epidemic of septic sore throat, 500, in a village of 3,500, were sufferers. This would indicate a communicable air-borne infection, from one to the other, or a climatic condition, causing the residual streptococci to become active.

McCannel(3) reports a direct contagion in a case of fatal streptococcic sore throat. A doctor had opened a peritonsillar abscess, and the patient had coughed in his face. Twenty-four hours later he began to feel grippy and developed septic sore throat, which ended fatally.

Sharp(4) reports that, in an epidemic of streptococcic sore throat, a hemolytic streptococcus and type—4 pneumococcus were isolated, and he suggests that the epidemic may have been caused by one of the isolated organisms, or by their simultaneous action.

Keegan(5) reports an epidemic of hemolytic streptococcic sore throat, during February, 1919, at the U. S. Naval Hospital at Chelsea, Mass., in which attention was first called to the presence of an epidemic by the numerous instances of a post-operative rise in temperature, in patients who had abdominal surgical conditions. Hemolytic streptococcus was recovered from the throat and wound in all cases.

In investigating a case, in an epidemic of encephalitis(6) a streptococcus was obtained from the nasal washings, heart blood and mesencephalon. When inoculated, intravenously into rabbits, the streptococcus showed a tendency to elective localization in the brain.

Tyson(7) reports a case of fatal streptococcic sore throat, in a child. The tonsils had been removed, but the lymphoid follicles of the pharynx were involved.

In regard to a milk borne epidemic, Sears(8) says, "Septic sore throat is, generally, considered as the only streptococcic disease, occurring in widespread epidemics, which is disseminated through the agency of milk."

The epidemic reported by Benson and Sears(9), which includes 487 cases of septic sore throat, with twenty-two deaths, occurred, almost exclusively, among the customers of a single raw milk dairy, and only a few cases in the epidemic could be attributed to contact.

Yates(10), in an address before the Sections of Laryngology and Otology of the Royal Society of Medicine, London, gives his studies on the action of the specialized ciliated epithelium of the nose and by means of the use of dyes in the nose and sinuses followed their drainage paths into the pharynx. His findings, in regard to the course of these drainage paths, is very suggestive of the source of some cases of acute, sub-acute and chronic forms of pharyngitis.

The experiments were as follows: Indigo carmine was dusted into the nose and was seen to be adherent to the mucus. The action of the ciliated epithelium seemed to roll the mucus round and round, enveloping the foreign material and removing it. Indigo carmine solution was injected into the normal antrum and appeared in the nasopharynx in two minutes. A definite course of the drainage stream could be followed by means of the dye. From the ostium of the sinus, the fluid seemed to follow a definite path. Flowing backward, in the middle meatus, it took a course downward, behind the eustachian tube, continuing down the side of the pharynx and appearing in the oropharynx, at the side of the pharynx and behind the posterior pillar of the tonsil. Part of the stream was diverted over the tonsil, but the main stream continued and, at the level of the dorsum of the tongue, divided into a larger and smaller portion. The smaller portion reached the lingual tonsil and the region of the epiglottis, while the larger portion proceeded downward to the junction of the posterior larynx and the pharynx. Ultimately, the mucus having reached these areas, was swallowed, but in one abnormal case, some of the mucus found its way into the trachea.

Solutions placed in the posterior ethmoids, took a course into the upper naso-pharynx and then flowed downward, both in front of and behind the eustachian tubes, joining below with the stream from the antra. That from the sphenoid spread over the pharynx and then, also, united with the main stream from the antra. That from the sphenoid spread over the pharynx and then, also united with the main stream from the antrum. Thus all sinus drainage ultimately reached partly the tonsil and anterior larynx, but mainly the posterior larynx and commencement of the esophagus, and was then swallowed.

The ciliary action, in cases where there was infection in the sinuses, is somewhat different than the normal. When mucus or pus is present in any of the sinuses, the rapidity of the flow of the indigo carmine may be greatly modified. In mucus or thick, gelatinous pus, the flow is only slightly altered, and the sinus contents are not stained by the indigo carmine, the thick pus and the dye solution not mixing.

In cases where the sinus contents consisted of thin green pus, the pus stained blue and the stained fluid was conveyed along the drainage tracks, sluggishly. In cases of sinus infection of the atrophic type, in which no pus was found within the sinus, but the secretion contained micro-organisms and debris, in some quantity, there was, sometimes, a complete stasis of the indigo carmine within the sinus, and often part of the track was deeply stained for some hours.

In two cases, in which indigo carmine was injected into an antrum, where this marked stasis was present, the dye appeared in the urine, in three-quarters of an hour, while a similar quantity of indigo carmine, taken by mouth, at a subsequent visit, did not appear in the urine.

Yates' clinical observations, in these experiments, were that cases in which the mucus was unstained, showed only local symptoms. Those in which the mucus was stained, and the ciliary paralysis was partial, gave evidence of remote local symptoms, such as laryngitis. Cases in which the cilia were apparently paralyzed and the secretion of mucus was absent, and micro-organisms were present, showed, in some cases, remote symptoms, such as arthritis, but in well marked cases of this type of infection, with atrophy, signs of sinus infection, as revealed by the ordinary methods, were scanty.

These findings of Yates, are in direct accord with clinical observations, where the routine examination of the nose includes the use of the naso-pharyngoscope. In cases where the atrophy of the mucus membrane of the nose and nasopharynx is not too far advanced, the course of the stream of drainage can be easily made out. Examination, through the mouth, shows the path of the main stream just behind the posterior tonsillar fold, marked by swollen mucous membrane and enlarged lymphatics. In the more atrophic cases, the mucous and muco-pus spreads over the posterior pharynx, drying and forming a glazed coating and causing the drying so often complained of in chronic nasopharyngitis. This infected secretion, while perfectly apparent on examination, seems at times to give no local symptoms whatever. At other times, due largely, I think, to climatic changes, the throat assumes an angry red appearance. This may be confined to the bed of the main current of drainage, or may spread over the posterior pharynx and soft palate. With this increased activity of the bacteria, there are often constitutional symptoms present.

Anatomically, the nasopharynx and the pharynx should not ordinarily harbor infection. Excepting the tonsils, the mucous surfaces are such that they have no recesses in which bacteria may remain free from disturbance. In the adult, the adenoid is usually atrophic, and offers little in the way of a hiding place. This free access, together with mucus, saliva, and the action of the superior pharyngeal and the palatal muscles, all should tend to hold the pharynx free from infection. Infected sinuses, however, form a reservoir where the bacteria may remain in a quiescent state, free from intrusion, and as they slowly drain can be a constant source of reinfection to the pharynx.

The function of the nasal mucous membrane, in regard to air borne infections, is to remove, as soon as possible, the invading bacteria and foreign material. The mucous membrane of the nose and of the para-nasal sinuses, secretes mucus from its cells and provides for the movement of this mucus by the action of the ciliated epithelium, which, lines the nasal fossae and the para-nasal sinuses.

Climatic changes, at times, affect the throat without causing any subjective sinus symptoms. In a chronic, low-grade infection of one of the large nasal sinuses, the blood supply and the temperature of the air filling the sinus, remain fairly constant. The bacteria, when they reach the pharynx, are subjected to increased blood supply, varying temperatures and the contact of such bacteria as are residual in the mouth and oro-pharynx. This difference in nutrition and oxygen tension, together with bacterial symbiosis, may account for the increased virility of these secretions, and for their changed behavior after they leave the nose. Often the discharge can be seen in the nose, causing, apparently, no inflammatory reaction, while the mucous membrane, along its drainage course in the throat, is seen swollen and inflamed.

It will be recalled that in Yates' experiments, the main stream of drainage from the nose divided, a smaller part going over the lingual tonsil and epiglottis, and the larger part behind the larynx and then being swallowed. Also that in one case, the secretion found its way into the trachea. Persistent and troublesome coughs, where there is no lung or bronchial involvement, sometimes fail to clear up till nasal or para-nasal infections subside.

CONCLUSIONS

Yates' experiments show that the drainage of the sinuses is over the pharynx, larynx and tonsils. They suggest:

1. That the origin of some forms of streptococcic pharyngitis come from above.
2. That persistent cough is sometimes due to nasal conditions.
3. That there is probably greater septic absorption from atrophic noses than from those with a profuse nasal or postnasal discharge.

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MODERN ASPECTS OF NUTRITION: THE PATHOLOGY OF MALNUTRITION

23. The Relation of Faulty Nutrition to Heart Disease—Continued.

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BERIBERI

The condition of the heart in beriberi depends upon the form and severity of the disease. Balz and Miura(135) distinguish four forms of this disease: (1) the light, sensory-motor form; (2) the dry, atrophic form; (3) the wet, atrophic form; (4) the pernicious, acute form. Others classify the forms of the disease as (1) acute, (2) subacute and (3) residual beriberic paralysis. It must be remembered that in all forms beriberi is but a single disease, and that classification is only a conventional thing.

In the light, sensory-motor form there are to be noted palpitation of the heart after exertion, and edema of the legs. In the dry, atrophic form, there are to be found generally paralysis and muscle atrophy. The patient shows a skeleton-like emaciation. In the wet, atrophic form, the disturbances of circulation are very prominent. Palpitation of the heart, tachycardia, dyspnea, oliguria and edema are frequent manifestations, as well as hydropic conditions of the pericardial and pleural cavities. The pericardial fluid may be as much as 100 to 500 cc. When a cure is begun, marked diuresis occurs, and the edema disappears, revealing great emaciation and muscular atrophy. In many cases, however, death takes place partly as a result of the severe hydropericardium and partly through paralysis of the heart muscle, or as a result of the onset of the acute pernicious form. Severe cases of the wet atrophic form may be complicated by paralysis of the intercostal muscles, the laryngeal muscles, the diaphragm, and less frequently of the optic abducens, facial, and hypoglossal nerves. When the vagus is involved, death ensues through paralysis of its functions.

The acute pernicious form is the one in which cardio-vascular symptoms are most prominent. It may be primary or may come on secondary to the other types of the disease as a result of overexertion or surgical operation. It may arrive without apparent cause. The onset may be quite sudden. Very severe symptoms may develop at first, which resemble an attack of acute indigestion with lassitude, anorexia, epigastric pain, tenderness and a sense of distension. Vomiting and diarrhea may occur. Within a few hours of the appearance of these symptoms signs of failing heart may develop. Restlessness, coldness of the extremities, lividity, dyspnea, nausea, and vomiting may occur. The precordial distress may rapidly reach the point of intense agony.

The heart is markedly enlarged, especially the right ventricle. The whole region of the heart pulsates on account of the paralysis of the intercostal muscles and also on account of the increased heart labor. On auscultation a systolic murmur is heard at the apex and in the second or third intercostal space. The second heart sound is accentuated. In the arteria cruralis an arterial-diastolic murmur is heard, and in severe cases even a tone. The pulse is feeble and of low tension. The rate is 120, and in severe cases 130 or 140. The tachycardia may pass into a condition of marked arrhythmia.

Disturbances in respiration accompany the cardiac condition. The breathing is wild and wheezing, and the whole thorax is raised spasmodically. Hoarseness and aphonia frequently develop. The urinary output is very greatly diminished. It gives a marked reaction for indican, and occasionally shows traces of albumin, and a positive diazo reaction.

Death occurs in but a few days or weeks, and sometimes suddenly in a very few hours. Death may ensue without the appearance of any nervous symptoms, such as paralysis. The pulse near death is small and frequent, the individual is cyanotic, and the lungs edematous. The death rate for beriberi is lowest in the dry form, greater in the wet form, and highest in the acute pernicious or cardio-vascular form.

In the less severe cases, which do not immediately prove fatal, the gastric symptoms subside in a week or two, while at the same time polyneuritis develops. The following things are now noticed—progressive weakening of the limbs, wrist drop, foot drop, paralysis of certain muscles, loss of reflexes. That the heart muscle has not escaped is evident from the palpitation, breathlessness on exertion, cardiac dilatation, tachycardia. Under favorable circumstances improvement may be noticed within two to three weeks. The edema diminishes, the urinary output increases, and the heart action becomes stronger. Convalescence is established in two months. Usually, however, the lesions involving nerves and heart muscle are too well developed, and the myocardial weakness and the polyneuritis become chronic. Throughout the whole course of the disease, there lurks the danger of sudden attacks of heart failure, any one of which may prove fatal.

The subacute and mild forms fortunately form the bulk of the cases. These begin insidiously. The symptoms due to cardiac weakness come on slowly. Slight edema around the ankles and puffiness of the face are noticeable. The localized edema may suddenly give way to extreme general anasarca with effusions into all the serous cavities. The subacute form of the disease is indistinguishable from the acute forms which have become chronic.

In the chronic form the residual beriberic paralysis may be marked. Beriberi, although not due to any preformed poison or toxin in the food, nevertheless resembles closely in its effect upon the heart and nervous system the symptoms of two common forms of intoxication—those due to alcohol and those due to diphtheria toxin.

In beriberi the heart at autopsy is more severely affected than any other viscera. Even in the most rapidly fatal case, the cardiac muscle undergoes fine diffuse fatty degeneration at a time when the nervous system on microscopic examination shows absence of any definite abnormalities.

The findings at autopsy of an individual dead from beriberi show definite cardiac involvement. The skin of the corpse is quite edematous. The extremities show cyanosis. Hydropericardium is a typical finding. As we have already mentioned, the heart, especially the right ventricle and auricle, show great dilatation and hypertrophy. In infantile beriberi Andrews(136) found the right heart so greatly hypertrophied as to equal or exceed the left ventricle in size.

The histological changes in beriberi are of considerable interest. Duerick(137) noted in the human being atrophic degeneration in cardiac as well as in skeletal muscle. The cardiac muscle showed yellowish spots and streaks of a fatty nature. Fragmentation of the muscle fibers may be observed, together with hyaline and fatty degeneration. Areas of advanced degeneration show replacement of muscle by fibrous tissue. Strong and Crowell(138) reported the cardiac muscle fibers swollen, edematous, granular, irregularly vacuolated, but not fatty. In infantile beriberi Andrews described the cardiac muscle fibers hypertrophied, with congestion but not degeneration.

In experimental polyneuritis the heart may show no microscopic findings, according to Vedder and Clark(139), or there may be slight edema, increased pigmentation or incipient mucoid or parenchymatous degeneration. Snyder(140) reported no change in the heart muscle of mice, except that due to congestion. According to Findlay(141), the myocardial cells in fowls and pigeons show cloudy swelling and often beginning fragmentation. Hydropericardium occurred in 20 to 26 per cent of the birds investigated. Emmett and Allen(142) observed atrophy in the cardiac muscle fibers of albino rats, and Voegtlin and Lake(143) described degeneratives changes in the heart of rats, cats, and dogs.

It is claimed by Nagaya(143a) that hypertrophy of the right ventricle distinguishes human beriberi from the polyneuritis induced experimentally in animals. In the latter condition cardiac atrophy is the rule. Hoffman(144) in polyneuritic pigeons found, however, that the heart was enlarged and flabby, and sometimes jelly-like. Findlay, in 43 fowls and 41 pigeons, observed no great atrophy of the heart, but often dilatation of the right side. The heart muscle appeared pale and soft with a line of edema frequently visible at the atrio-ventricular junction, especially of the atrium. Drummond(145) noted enlargement of the heart in rats. In 200 fowls and 150 pigeons, Tasawa(146) found the heart usually markedly atrophic, although the right heart and sometimes also the left were distinctly dilated. Vedder and Clark(147) concluded that no cardiac hypertrophy comparable to that in human beriberi occurs in polyneuritis gallinarum. McCarrison(148), in pigeons, Souba and Dutcher(149), and Souba(150), in chicks, noted a significant loss in cardiac weight. Lopez-Lomba(151) found the cardiac weight normal in pigeons, excepting an early slight transient increase.

MALNUTRITION AS AN ETIOLOGICAL FACTOR IN HEART DISEASE

Dr. Don M. Griswold(152), in a very interesting article entitled "Heart Disease as a Public Health Problem", published in February, 1927, makes the following significant statement: "If we are embarking on an investigation of the causation of heart disease we will of necessity have to know the etiology of heart disease." From the facts and discussions given we cannot but conclude that the heart is involved in every type of malnutrition. Conversely we may state with equal emphasis that malnutrition is an etiologic factor of prime importance in the cause of heart disease. As a cause for such diseases it is even more important than infection, if we accept the fact that malnutrition leads to greater susceptibility to infection. Furthermore, we may state that food has a very important bearing on the biologic integrity of the kidney, the vascular system, and on blood pressure. Cardio-vascular-renal disease is the reward one may reap for subsisting for several decades on a diet not properly constituted.

Having shown the connection between malnutrition and heart disease, we must now establish the fact that malnutrition is as prevalent or even more prevalent than heart disease.

THE PREVALENCE OF MALNUTRITION

Malnutrition is, indeed, very common among the adult as well as the young. The Metropolitan Life Insurance Company in the examination of 16,662 male policy holders found the following errors in hygiene:*

Personal Habits and Conditions	Per Cent
TOO HIGH PROTEIN DIET	37.6
TOO LITTLE WATER CONSUMED	36.9
TOO MUCH TEA AND COFFEE	40.7
OTHER ERRORS IN DIET	46.6
OVERWEIGHT (20% or greater)	12.9
CONSTIPATION	39.7
Hemorrhoids	12.3
Tobacco, excessive	33.1
Hours of work too long	26.4
Lack of exercise	60.8
Defective vision, uncorrected	29.5
Defective vision, corrected	25.4
Enlarged septic or burried tonsils	26.2
Heavy dentistry—x-ray advised	41.8
Frequent or severe headaches	15.4
Frequent colds	17.7

The estimate made in 1918 of the physical and mental condition of the 22 million school children in the United States reveals a large percentage of malnutrition and defects consequent upon malnutrition.**

At least 1%—200,000 children—are mentally defective.

Over 1%—250,000—are handicapped by organic heart disease.

At least 5%—1,000,000—have now, or have had, tuberculosis.

5%—1,000,000—have defective hearing, which unrecognized gives many the undeserved reputation of being mentally defective.

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*Dublin, L. I., Fisk, E. L., and Kopf, E. W. Physical Defects as Revealed by Periodic Health Examination. American Journal of Medical Sciences, 1925, No. 4, Vol. CLXX.

**Preliminary Report of Commission on Medical Education, 1927, January, page 76.

25%—5,000,000—have defective eyes. All but a small percentage of these can be corrected.

15-25%—3,000,000 to 5,000,000—have adenoids, diseased tonsils, or other grandular defects.

10-20%—2,000,000 to 4,000,000—have weak foot arches, weak spines, or other joint defects.

50-75%—11,000,000 to 16,000,000—have defective teeth, and all defective teeth are more or less injurious to health.

75%—16,000,000—have physical defects which are potentially or actually detrimental to health. Most of these defects are remediable.

15-25%—3,000,000 to 5,000,000—are suffering from malnutrition, and poverty is not the most important cause of this serious barrier to healthy development.

As a matter of fact malnutrition is the most common hygienic crime perpetrated upon the young and the most common one committed by adults. Time and time again it has been shouted from the tree tops that the American diet is inadequate and unbalanced, being short in vitamins and the mineral components, such as iron, calcium, phosphorus, and in some localities in iodine. The American people are not suffering from definite deficiency diseases but from borderline or latent cases.

THE AMERICAN DIET

The American diet taken as a whole is far from nutritionally adequate. The American diet is stereotyped. It is based on social usage, not on scientific facts. McCollum and other nutritionists designate it as the meat-bread-potato-pie-coffee diet. It is wholly inadequate for optimal biologic existence. It saps vitality and brings about greater susceptibility to infection.

The term "malnutrition" is used in two senses. To the popular mind it calls up the picture of an individual emaciated, anemic, and scrawny-looking. To the nutritionist it calls up the picture of an individual who may be in good health to all outside appearances, but who on analysis of his food intake, shows an excess in total food intake, or a qualitative or quantitative deficiency in water intake, in mineral intake, in vitamin intake, in fat, protein, or carbohydrate intake.

To illustrate: Miss Alice Smith, although young, is old-fashioned in her ideas of nutrition. She is still counting calories. She takes no account of other dietary essentials, such as water, mineral elements, and vitamins. She almost flew into a rage when told that she was suffering from malnutrition and that her hemoglobin content and red cell count gave evidence of anemia. In her attention to calories she forgot to supply sufficient iron in her diet.

Mr. Jones is a gentleman, successful and well thought of in his community. He is good to look at and is well built. A study of his daily diet leads to the conclusion that he only gets about 400 milligrams of calcium instead of 750 milligrams, which are the figures for an adequate diet. Even if his food is correct in all other dietary essentials, we still maintain that Mr. Jones is malnourished, and that some day he will suffer the dire results following in the wake of malnutrition.

Mrs. White eats well. Her food is carefully balanced. But she does not drink enough water. She is constipated, and her skin is sallow and pasty-looking. She feels helpless, "pepless", and hopeless. Mrs. White is suffering from malnutrition.

To illustrate once more: Mr. Mason is a well developed individual of forty-five. He has education, wealth, social prestige, and leisure. He is a member of the Athletic Club, swims, plays tennis and golf, and enjoys horseback riding. He is an all around likeable sort of man. Unfortunately he has been complaining for the last several years of vague, ill-defined symptoms of malaise, lassitude, headaches, loss of appetite, lack of concentration, etc. His family physician says there is nothing the matter with him. "Just a plain case of nerves, Mr. Mason."

The truth of the matter is that Mr. Mason is suffering from malnutrition. Mr. Mason is an educated man, interested in health problems. He has been following with enthusiasm the recent advances in nutrition. He has changed his diet to conform to the newer findings in this field. As a matter of fact, his diet would off-hand be considered complete, adequate and up-to-date, qualitatively and quantitatively. Unfortunately all his foods, including fruits and vegetables, are thoroughly cooked. He uses no raw foods in the diet.

Heat partially destroys the nutritive value of food. Proteins, fats, and carbohydrates undergo chemical changes as a result of the application of heat. Some of the vitamins are partially or completely destroyed by heat. It is for these reasons that we must include raw food, such as fruits and vegetables, in order to overcome the deleterious effects of heat. A diet in which all the food preparations are cooked cannot maintain the individual in optimal health. The Eskimo has to use raw meat, but we can use raw fruits and vegetables instead.

R. M. Allen(153), in his "Vitamins in Diet and Health", points out the dietary inadequacies of our nation. Processes in food preparation have in many instances been completely industrialized. The result is that food producers have placed on the market new substances nutritionally inadequate, such as oleomargarine, cotton seed oil and corn oil. Sugar, rice, salt and all kinds of flour are refined and devitalized. Muscle meat is consumed in astonishingly large quantities and very little attention is as yet being paid to the more nutritious visceral organs. The annual consumption of the more common foods as given by the United States government statistics should give rise to much nutritional sermonizing. Below is a table giving interesting information:

	Pounds
Sugar	10,639,000,000
Corn starch	430,112,000
Rice	373,738,000
Wheat and corn flour	23,000,000,000
Corn syrup	1,164,467,149
Corn sugar	527,707,000
Corn oil	106,947,373
Cotton seed oil	1,001,208,000
Meat	17,000,000,000
Poultry	1,800,000,000
Fish	2,000,000,000

The table shows us that a vast amount of sugar is used by the people. Unfortunately, the great quantity of this sugar is over-refined, so that vitamins and mineral elements are completely removed. With reference to the rice and flour in the list, we may state that 8,000,000,000 pounds of bran and germ must be put back for human consumption.

The total annual milk production in the United States amounts to about 7,800,000,000 pounds, estimated as dried whole milk. This amount is hardly enough to supply as adequate amount of growth-promoting and health-sustaining qualities to the total of white wheat and white corn flour, and vitamin and mineral-poor sugar and starch consumed. Dr. Haven Emerson(154), in his address before the World Dairy Congress, claims that the daily per capita consumption of milk is around 0.94 of a pint in the farming districts, to about half a pint in the cities. This is a low and insufficient intake.

A great part of the milk, as in the case of rice and flour, is also wasted. Forty per cent of the supply is used in butter making. The solids, not fat, containing vitamins and valuable salts, are left behind in the whey, which goes mostly for animal feeding. They are needed for human nutrition.

Turning to the plant products, Sherman and Smith(155) in their book, "The Vitamins", state as follows: "In the average American food supply, vegetables represent about one-tenth of the expenditure for food and furnish about one-tenth of the total calories and of the total protein of the food; of calcium, phosphorus and iron they furnish much larger fractions, and it is probable that the vegetables also furnish more than one-tenth of the vitamins in the average dietary". Considering the small per capita consumption of milk and the eight billion pounds of vitamin and mineral-rich substances removed from the whole grain used, we may say that this ten per cent of vitamins supplied from the vegetables consumed is too small for our biological needs.

In the United States, that total annual consumption of the more common plant foods is 213 pounds per capita. The table below gives an idea of the relative consumption of these foods:

	Pounds Per Capita
Lettuce	2.53
Cabbage	14.00
Spinach	.50
Asparagus	2.40
Onions	6.50
Tomatoes	33.00
Green peas	3.60
Potatoes	145.00
Sweet potatoes	3.90
Green beans	1.80

These figures are too small for a nation like ours where the soil literally overflows with milk and honey. In addition to the small consumption, we must not overlook the fact that the nutritional situation is made worse through peeling, improper cooking, and wastage of water in which cooking is done. As a result, the vitamin and mineral content of these plant products is considerably diminished before eating.

It is now recognized that fresh fruit is a nutritional necessity. But fresh fruit does not enter into the diet to the extent believed. In a good many families fruit appears irregularly and infrequently on the table. Through force of habit a good many of the foreign families in our midst consume but very little fruit. The consumption of fruit, however, would be much larger if it were not for the prevailing high cost which renders them inaccessible to those of small means.

To sum up the nutritional situation in this country, we may state that our meals are stereotyped and our foods traditionalized, and that we still cling tenaciously to the meat-bread-potato-pie-coffee diet and that we still continue to make meat—and muscle meat at that—the center around which other foods, more natural and wholesome, play but secondary importance. The result of feeding tests; the general prevalence of subnomal health and disease; the large amount of foods consumed that are poor in vitamins or in mineral elements, or that have been robbed of these in their preparation for the market; the great quantity of food consumed that contains inferior protein (protein poor in essential animo acids) and inferior fat (fat poor in fat-associated vitamins); the final form in which food is eaten—all these facts lead to the inevitable conclusion that we as a nation have not grasped the opportunities offered to us by the newer knowledge of nutrition. Perhaps, as McCollum(156) states: "Some time must elapse before a full appreciation of the importance of approximating the optimum in the character of the food supply can be expected, but when appreciated at its full value, our knowledge in the field of science of nutrition will be regarded as our most precious possession."

In the paper to follow we shall discuss dietary treatment in heart disease.

DRAINAGE OF THE PERITONEUM

FREDERICK G. KOLOUCH, M. D.,
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The subject of drainage of the peritoneal cavity is an old one and it is very difficult to find anything new in the recent literature. The experimental work being done since Yates' experiments does not show us the light and we are still waiting for some surgical Moses to lead us out of the wilderness. Costain has approached the problem from a new angle, by attempting to prevent the toxemia of peritonitis by lymphaticostomy, but McGuire has shown that the blood stream carries off fluids faster than the lymphatic duct, although Ssokolovskij with the same line of experiments has come to diametrically opposite conclusions. The large amount of literature appearing recently seems to be the product of the advocates of both procedures (drainage and non-drainage). in the treatment of peritonitis. Unfortunately, some have permitted their zeal to prove their case, to cause them to disregard factors other than the employment of drainage, in the outcome of the case, that is, duration of the disease, condition of the patient, amount of manipulation necessary to remove the focus of infection, virulence of the infection, and many other conditions which help decide the fate of the patient. That there is a constitutional resistance in some patients to the disease, is mentioned by Kirschner.

The relief of pus tension is the most important step in the therapy of any acute surgical infection. That is accomplished by drainage. In order that it be efficient, drainage must be continuous. The peritoneum cannot be treated on the same basis as other parts of the body, because it cannot be drained longer than a few hours.

When a foreign body is introduced into the normal peritoneal cavity it is completely covered with fibrin, which is entirely impervious to fluids, in four hours, but in the presence of an infection it does not become quite so rapidly circumscribed. From the foregoing fact arises the question which confronts the operator any time he treats an acute abdomen, or has a soiled peritoneum to deal with, whether to drain or to close the wound.

The peritoneum is one of the most resistant tissues in the body against bacterial invasion, and its two chief defensive powers are absorption and exudation. Absorption takes place by way of the lymphatics and blood vessels, and if permitted to go on too long and too fast, leads to septic intoxication, the usual cause of death in peritonitis. There are several hypotheses advanced to explain deaths from peritonitis. One theory is that the toxins cause paralysis of the vascular centers in the medulla oblongata, which is not very probable because the blood pressure falls only a short time before death; another theory advanced is that the abdominal capillaries are so injured by the toxins, that the portal circulation is impaired, the blood accumulating in the abdminal cavity, but there is proof lacking for this hypothesis. Absorption is delayed when the intra-abdominal pressure is increased enough to check the circulation within the abdomen. Here tympanites may be a conservative factor, but the question arises how far increased pressure can progress before it causes paralytic ileus. Exudation is a product of bacterial invasion wherein the peritoneum secretes a bactericidal fluid, and if the invading agent is sufficiently virulent, will go on to pus formation. Outside of a laboratory examination it is very often impossible to distinguish between protective exudate and pus, and a laboratory examination is not always feasible in emergency work, especially to the cross road surgeon, working in the patient's home.

It should be remembered that it is held by the bacteriologists that bacteria produce a bactericidal toxin, and in the peritoneal cavity the bacteria adhere to the serosa, hence it is readily seen that it is impossible to remove them. The only way to destroy them is by the toxins which are contained in the exudate.

All the necropsies that the writer has seen, or has done, on patients dying from general peritonitis have had a few points in common, that is, that the small intestine is usually at the bottom of the pelvis, that the exudate is high in the abdominal cavity and that drained areas are surrounded by adhesions, which isolate the drainage material from the rest of the peritoneal cavity. There is also a large amount of inflamatory peritoneal reaction around the foreign body introduced for drainage. I doubt the advisability of so uniformily placing drains at low points of the abdomen for pathology higher up, which still seems to be a common custom.

Statistics from some clinics treating a large number of cases of general peritonitis show that results obtained by primary closure of the peritoneal cavity are better than those obtained by drainage. The reason they give for it is as follows: Following the operation they sit the patient up, the excess exudate which is not absorbed finds its way to the *cul de sac* and localizes there as a walled-off residual abscess, where it is either absorbed later or drained through the vagina or rectum. Of course with that procedure, the incidence of post-operative abscess is increased but it is a welcome substitute for mortality. The intestines become somewhat adherent above the collection of the fluid by the deposition of fibrin. If a foreign body is introduced for drainage, adhesions form much quicker, and the *cul de sac* contains small intestine instead of the exudate, so it is obvious that drainage of the general peritoneal cavity is impossible.

As to the question of introducing drains directly to the contaminated area this much may be said: Drains hasten the formation of adhesions, thereby making the drained area extra-peritoneal, and in that way it is possible to at least partly prevent the spread of the infection. In the event of a potential fecal fistula, such as gangrenous cecal wall, where the extent of the involvement is so great that it cannot be sewed over, the advisability of drainage is self-apparent. The same may pertain to a definitely walled off collection of pus.

The writer served his surgical apprenticeship under a product of the schools f Albert and Van Iselsberg, where drainage and counter drainage were the first and last issues involved, in the therapy of peritonitis, so a serious mental hazard had to be overcome when about four years ago drainage was discarded. At first it seemed hazardous to sew up an abdomen full of odorless or foul smelling pus, but our apostasy seems to have been rewarded. The mortality has been much lower in cases of peritonitis which were treated before paralytic ileus had developed, than it was when drainage was used, the same can be said of postoperative obstruction.

Of course, some of the improvement may be due to the fact that all operative manipulations are strictly confined to the original focus of infection, and no time is spent in mopping up the life saving, toxin loaded fluid in the peritoneal cavity.

The following facts are the reasons why the problem of drainage of the peritoneal cavity still remains a debatable question:

1. The number of deaths from peritonitis is not decreasing, in spite of the condition being a matter of common knowledge.

2. Experimentally, it is impossible to reproduce the pathology annd septic fluid of peritonitis.

3. Pathological findings do not run true to type in the peritoneal cavity, so it is difficult to standardize the treatment.

COMMENT

The pathology of peritonitis pursues a decidedly uneven tenor, the different routes of intra-abdominal absorption of infection are still a matter of conjecture, their description from time to time will be revised, but at present a few facts have to be taken into consideration, namely, that free drainage cannot takeplace through the adhesions incident to peritonitis, that all drains are local after a few hours, that the peritonitic bowel aggravated by a foreign body is the forerunner of a post operative bowel obstruction and usually at best is a partially obstructed bowel, that the peritonitic bowel has very little absorption from its serous coat since the inflammation has destroyed its function, but mostly the toxemia comes from absorption through the mucous membrane of the bowels above the obstruction, for the relief of which the operations of jejunostomy and ileostomy have been devised. Taking notice of all these facts, it seems that attempted drainage of the general peritoneal cavity hits the patient oftener than the disease. That the treatment of peritonitis is not based on pathology but on empiricism, is shown by the many lines of treatment offered for the condition. Conclusions drawn from personal experience are usually worthless, but after reviewing the literature of both sides, at the same time eliminating the element of prejudice, I am of the opinion that the closed method is the safer.

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THE PART OF THE STATE MEDICAL JOURNAL IN MEDICAL ORGANIZATION*

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With the idea that state medical journalism, in its relation to medical organization merits discussion, I have taken courage to present the subject at this time.

It would be presumptious of an editor of but few years of service on a middle western journal of relatively minor importance to assume to tell the veteran editors and particularly those of state associations of the more populous states how to conduct state medical journals. Each state has its own peculiar medical problems. The urban population in some states, lay and medical, far exceeds the rural population. States given over to mining and manufacturing must have medical and organizational problems different from those given over wholly, or almost wholly, to agriculture. Nebraska, for instance, is a purely agricultural state with the urban population, lay as well as medical, only about one fifth of the rural population.

A few general propositions may, however, be advanced for discussion even though they emanate from the rural districts of the west.

It has been said that when the idea of state association owned medical journals first originated in the A. M. A. headquarters, the dominant idea was that of a state association bulletin. Whether this was the original conception or not, it is certain that most state journals have developed until they are much more than mere bulletins. They are organs reflecting the organizational and scientific endeavors of the organized profession of the respective states. They are this, more or less, according to the cohesion of the organized profession and according to the spirit of the directing head, the editor in charge.

A state journal must reflect the expressed wishes of the organized profession of the state and of the American Medical Association, and on matters about which there is some question of policy the journal must not go far afield. The state journal must discuss, editorially, the everyday problems of the profession from the various angles, and much stress should be placed on these discussions. The editorial pages should reflect the highest ideals of the profession and should so impress the reader as to be accepted as authoritative.

Good editorial work on a state medical monthly journal requires the greater part of the time and energy of one person for about one week each month. The editor must take pride in his work. The work on a journal requires individual personal attention: It cannot be well done by proxy. The better the editor knows the profession, as individuals, the better he will get along with his work as editor.

Editorial service should be paid a compensatory sum to get the best results. With the best intentions any physician of average ability cannot give one fourth of his time, year after year, for the good of the cause and without compensation.

There are good reasons for the secretary-editor in the scheme of organization of state medical associations, and on the contrary, there is much to be said for a separation of the editorship from the administrative activities of the association. The editor should, however, have earned his laurels, by service in medical organization work, so as to have a keen understanding of the fundamentals of medical organization.

A state medical journal must have high ideals for the profession it serves and aims to reflect; but it can hardly aspire to the level of *The Journal of the American Medical Association*—the greatest and best medical journal in the world.

The state medical journal is perhaps the most cohesive thing in medical organization today, and its influence may be widened by catering to the human side of the physician of the state. The *esprit de corps* of the profession must be jealously guarded. This implies sympathy, devotion, enthusiasm and jealous regard for the honor of the body as a whole.

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I may be permitted to develop this topic by saying that county and district medical society meetings, from those of the highest excellence to those of relatively minor importance, should be featured in the journal as representing a cross-section of the work of the profession of that community. Unusual incidents connected with meetings, such as picnic meetings, picnic dinners, banquets by the local chambers of commerce or by the local profsesion, dinners served by the physicians' wives, groups of physicians chartering auto busses to attend meetings at a distance in a body, are worth mentioning in the state journal. They interest the physician-reader.

I believe that the editorial pages of a state medical journal should be an open forum for the discussion of the various problems of the profession from all angles. In the case of the Nebraska journal, members of the profession whose opinions are considered worth while are requested to contribute editorials from time to time. From two to four such editorials are a feature of every number of *The Nebraska State Medical Journal*, and it is believed that this policy adds a valuable feature to a state medical journal.

"Human Interest Tales", a feature of *The Nebraska State Medical Journal,* needs no defense. It is the creation of the present editor for which he is willing to assume full responsibility. On the theory that the physician is interested to know of the movement of his friends, classmates and confreres, from half a page to a page in 7 point type is devoted to personal items about the medical men of the state—marriages, vacation trips, post-graduate courses, removals to new locations, etc. Readers say "Human Interest Tales" is the first thing they look for on opening the journal. Short comments on phases of medical economics and of various things related to medicine are of interest to the physician and may find a place in a state medical journal; they will be read with interest and profit by the local physician—and perchance by his wife. Many physicians' wives take interest in the state medical journal. This is particularly true since the organization of the woman's auxiliary. The state journals may, therefore, become the physicians' ladies' home journal. This may seem like a pleasantry, but it is a significant thing that the wives of the physicians take enough interest in their husbands' profession to want to read the state medical journal. Physicians with such helpmates will succeed if feminine interest can compel success.

The Bulletin of the Medical Society of the County of Kings for May, 1926, said:

> News to men in the newspaper game is tinctured strongly with personality. Glance over the captions of the morning paper as you view it over the Mocha and Java and note the number that contain the name of an individual. Therein lies a fundamental difference in viewpoint. To them personality in news is vital; to us personality in medical publicity is obnoxious. Between these two points must be the common ground on which both can meet with great resultant good to the public which they and we serve and whose weal, after all, is the goal we so zealously seek.

Medical journals are read by the public—certain members thereof—with much interest. Harm cannot arise from such interest. Several years ago the publication board of *The Nebraska State Medical Journal* decided that inasmuch as the Christian science journals and the osteopathic publications were furnished to the libraries of the towns of the state, *The Nebraska State Medical Journal* should also be mailed regularly to every library in the state. I believe this good policy.

I have a theory that fillers, whether in the advertising pages or among the original reading matter. should be abstracts of scientific or economic worth, or innocent pleasantries touching on the everyday routine of the physician.

The physical appearance of a medical journal counts for much . The mechanical execution and the general appearance should be artistic, appealing to the esthetic sense. A journal should not be an artistic monstrosity.

A discussion of state medical journalism would not be complete without mention of the great·assistance derived from the Co-operative Medical Advertising Bureau. Without this assistance, and with the censorship exercised by the Council on Pharmacy and Chemistry of the American Medical Association over the advertising pages, many state medical journals could not exist. Even with this assistance, the finances of some of the state journavs must be precarious enough. For some years *The Nebraska State Medical Journal* has not carried an "ad" from any publishing house. Recent correspondence with a well known eastern publishing house brought out the statement that publishers feel that they cannot afford to continue advertising in the state journals for the reason that *The Journal of the American Medical Association* has within a comparatively few years raised the price for advertising from $65 to about $260. ..*The Journal A. M. A.* piles up the surplus while the state journals go begging. I do not mean to imply that *The Journal A. M. A.* is doing anything wrong; but rather that in the working out of the advertising contracts the state journals do not fare so well.

If in some manner the bureau could obtain and furnish to state journals more advertising than is now being furnished, the state journals could be improved and could do better work for the profession they serve.

Touching briefly on other phases of the business side of state medical journalism: Our publication board has adopted a policy of mentioning "Books Received", but not of reviewing books, from publishers that do not advertise in the Nebraska journal. There is also a rule of furnishing three cuts to an article at the expense of the journal fund—the author paying for any additional cuts if wanted or needed to elucidate the article.

DISCUSSION

DR. O. S. WIGHTON, New York: I was very much interested in Dr. Long's statements about his journal, which I think is one of the best in the country. He stated that the journals were often adapted to the needs of the state in which they were published. For that reason New York has had to solve its own problem a little differently from the methods that exist in Nebraska.

New York's idea of buliding up its state journal is in creating organized departments which, when given to individuals, place with them the responsibility of developing the strength in that particular department. For instance, the journal starts with scientific articles. There follow three or four editorial pages on current events, subjects which it is thought will interest the readers, debatable questions, and so forth, adhering positively to a policy that has already been approved by the publication committee.

District meetings have been a particular phase of the New York journal. It has striven to tell the men throughout the state what is going on at the various district meetings. There has been incorporated also under the council of the state a legal department in which questions which would interest physicians relative to malpractice suits, state insurance and various phases in which a physician might be held liable are discussed with specific examples. To me this is rather a pertinent question, because the whole question of insurance and malpractice is very live before the medical profession.

It also devotes pages to current events. They are really editorials of news events which in a separate department have greater freedom of expression.

There are book reviews and they are well and carefully done. I like them better than ever because recently I found a candid review of one book which was frankly condemned. In other words, the reviewer expressed his opinion honestly, giving his opinion of the book rather than a laudatory account which might have been used in laudatory advertising by the publisher.

My state is going through a stage of evolution. In every state there will come a time when the journal as an entity should be organized and separated from other state society activities. I have been extremely optimisitic in the creation of the editorial department as a separate unit of the New York state work. For instance, the New York Academy of Medicine is occupying new quarters at One Hundred and Third Street and Fifth Avenue. In that building the journal has its own separate offices. The executive editor, Dr. Frank Overton, to whom much of the journal's success is due, is there. A room is provided for the secretaries, the women who take dictation to make up the journal. Three is a desk for an advertising manager which it has been thought wise to install as a part of the advertising publishing unit. That man takes care of all the advertising and gives it his undivided attention. Inasmuch as the journal is adhering strictly to ethics of medical advertising as advocated by the A. M. A., as far as is humanly possible, an attempt is being made to get enough out of the advertising department so that some day it may save the journal from a definite loss.

I wish I knew how to make people read a medical journal. Sometimes the use of a personal column creates interest, but, after all, I really think it is the meat within the journal, the method of composition; the care and painstaking thought of its editors and the complete harmony and cooperation of all concerned which make the journal one that will keep on growing.

DR. C. A. RAY, West Virginia: Dr. Long's paper has been encouraging to me. Two years ago when The West Virginia Medical Journal was reorganized and placed in the hands of a publication committee of five members, I unfortunately was made chairman of the committee and editor-in-chief. Pondering over these honors, my first idea was to change the appearance of the journal. That duty was delegated to the executive secretary and he has been responsible for the physical appearance of each issue. The next idea was that the journal should be devoted to the organization of the profession in West Virginia and that I should devote most of my writing to this feature. Accordingly, in almost every issue I have written at least one editorial stressing ethics, attendance at meetings or benefits derived from such attendance.

At the time of the reorganization, dues of the state association were increased from $5 to $10 annually. A substantial loss in membership was expected. Sixty members were lost the first year, but all were gained back the second year, with others besides. The attendance at county meetings is better as is that at state meetings. The men are taking a greater interest in county and state activities and I believe much of this reawakening is due to policies promulgated by the publication committee.

Of course, the journal has had its reverses, and in view of these I want to say I have been much encouraged by Dr. Long's paper.

DR. C. A. SMITH, Washington: Northwest Medicine, I think, is a little different from any of the other journals. This journal is the official organ of the state medical associations of Oregon, Washington, Idaho and Montana. When this arrangement was made in 1909, the committee labored some time and evolved this scheme which fits the situation pretty well: Each of the associations represented by the journal elects three trustees. Those trustees, twelve in number now, are incorporated as Northwest Medical Publishing Association. This agreement has to be explained as nearly every association meeting in the different states. Those twelve men are officially the owners of the journal. They meet once a year and go through the form of electing an editor-in-chief (I have been editor ever since the arrangement has existed), and an advertising or managing editor. The secretary of each association is ex-officio assistant editor. The house of delegates of each association elects two men as associate editors. They are generally in different parts of the state and they are supposed to contribute items of interest and other matters pertaining to each association. The secretaries of the association, the assistant editors have as their duty to keep the editor posted on matters relating to the interests of the four different associations concerned.

The preceding speaker mentioned the fact that he did the whole job. That is the way it is with me. The headquarters are in Seattle, tributary to a wide extent of territory, so that it is difficult to keep in intimate association with the representatives of all the different states. Material for publication is obtained from the annual meetings of these four state associations and from meetings of the county societies, besides other sources.

As long as this arrangement has existed, since 1909, it has gone along satisfactorily. The four states represented each have an equal voice in the management of the journal and its affairs. Of course, they don't come into very intimate connection with it because the representatives get together only once a year. At some meeting, where there is the largest representation that can be obtained from the four different associations, the financial report is given, showing how the journal is going, and criticisms and suggestions are requested from the different states. I offer you this plan for what it is worth, if any other combination of states wants to copy it. Any one of these four associations is not large enough or strong enough to publish a satisfactory journal by itself. It could not get the advertising and could not exist, but the four united provide a subscription list of about 2,300. That does fairly well and makes an impression on advertisers. There is sufficient revenue to pay the bills and carry on satisfactorily.

MR. S. O. NEALE, West Virginia: I want to stress for a moment what Dr. Long says about the co-operative advertising bureau. I have found that is an organization that absolutely answers the needs for all of the journals. It is a pity, in my mind, that all of the journals are not affiliated with it. In the newspaper business the successful newspapers are those that have efficient national representatives. Those national representatives get a fee for their services. It is only right and proper that all of the journals should be in cooperative movement. A journal which is outside is only detrimental to the rest of the journals that are trying to make names for their organizations.

If any of the representatives here are not in that bureau, I think they should be there. It is important that they should get in.

DR. D. S. FAIRCHILD, Iowa: From the discussion here this afternoon it is evident that different sections of the country and different states have their own problems in regard to the medical journal. I have a good deal of time on my hands and I look over all the journals that come to me from the state societies, so I am about as familiar with the journal of West Virginia as I am with the Iowa journal. I find that a great deal of information can be obtained from examining the editorial pages of each of these journals, and in accordance with the organization of the profession over the country, the medical journal activity must also differ. In a state like Iowa which is largerly agricultural with a number of good sized towns, one is able to get a good deal of material from various sources, but there are not any large city medical organizations. The Iowa journal finds that it is able to make valuable abstracts of papers which are published in the journals of other states and get their sense of the situation by reading their editorials.

I have been convinced in private conversation at one time and another that the editors of a good many of the state society journals fail to examine their neighbors' work and therefore they have the feeling, almost, that their journal is the only journal of a state society.

DR. W. P. BOWERS, Massachusetts: It may be interesting to hear a few words from the oldest medical journal in the United States so far as continuous existence is concerned. The Boston Medical and Surgical Journal will have rounded out its one hundredth birthday in 1928 . It was originally an independent journal owned by a few persons. In 1921 it was taken over by the Massachusetts Medical Society and has become the organ of that society and also the organ of the New England Surgical Society, the Boston Surgical Society, the New Hampshire Surgical Club and the New England Pediatric Society.

When it was taken over it had a circulation of about 4,000. With the endorsement of the society and arrangements for enlargement of the journal it has in five years increased its circulation to nearly 6,000. The society employs a full time editor and he does almost all of the work which my friend from Tennessee says that he does, except that he has in association with him an editorial staff which helps to bear the responsibility of rejection of manuscripts. This is an important function of an editorial office because of the number and quality of papers submitted. About 25 per cent of all the material which is offered has to be rejected and a considerable proportion of that material comes from the Middle West. I presume it has been previously rejected by the journals of the middle West and the American Medical Association.

I have to acknowledge that some of the material from my own state has to be rejected, because an attempt is being made to maintain a journal in conformity with the standards which are adopted by the reputable journals throughout the United States.

I believe most heartily that if one is going to conduct a journal of any size there must be a full time editor. He must be able to determine the quality of papers and to reject those that do not qualify. There should be a staff to do that work in conjunction with the managing editor. There has been an understanding relating to the business feature of maintaining a journal that has been brought about since I have been at this meeting. It has been announced that the journals which are associated together in the bureau should not pay commissions to advertising agents.

A conference with Mr. Mattson, who visits the journals and brings advertising material, consolation and encouragement, together with Mr. Braun, has brought about an understanding that, outside of those matters which relate purely to medical preparation, the journals have the privilege of accepting advertisements from advertising agencies and paying a commission. So those who need to go out beyond the fields of ordinary medicinal advertising, pharmaceutic preparations and so forth, may approach the advertising agencies and feel at liberty to pay them their commission and thereby add to their income.

DR. ALBERT E. BULSON, JR., Indiana: For eighteen years I have been editor of the Indiana state journal, and for fourteen years before that I was editor of an independent journal. Therefore, from my experience and my observations, I believe that I am justified in offering some comments that perhaps may be useful to thte men who are younger in the editorial game.

A state will not have a live and up-to-date medical journal unless it has a live and up-to-date medical editor, and that editor not only should be selected for his qualifications but also should be given a great deal of lattitude in carrying on his work. The minute he is tied down with a lot of rules and regulations, that minute his efficiency and initiative are tied up. He not only should be permitted but also should be urged to express his editorial opinion freely, and at all times, in support of the highest ideals and traditions of the medical profession. He should not be afraid to criticize as long as his criticisms are constructive, and he never should be so weak-kneed that he is afraid to express an opinion because he fears that it will hurt some one's feelings.

I happen to be one of those editors who is editor, assistant editor, advertising manager, and proofreaded all in one. Fortunately, I happen to be sufficiently busy in a professional way to require several lay and professional assistants in my office, and every one of them takes more or less personal interest in the journal and helps to care for the routine work. I believe that when all the affairs of the journal are dependent on one man, the whole enterprise is also apt to be conducted and managed better because it lays most of the responsibility on one man's shoulders, and he realizes that it is his initiative and effort that spells success, and that he cannot claim an alibi.

My particular criticism of most of the state journals is that they do not support the A. M. A. enough, and more specifically, that they do not support all of the enterprises sponsored by the A. M. A. Hygeia would have a much larger circulation and be a more forceful factor for good in educating the people concerning individual and community health if the state medical journals boosted it more, and insisted on the rank and file of the medical profession also boosting it. A similar comment will apply to the support of the Council on Pharmacy and Chemistry, and I think that every state medical journal ought to urge its readers to prescribe only Council-approved proprietary preparations. I also think that the state journals ought to use regularly the copy that is sent from the A. M. A. office concerning the work of the Council as well as the work of the Bureau of Investigation which later is so profitable and so valuable to the public as well as the medical profession.

The state journals of Indiana and Illinois have been called bolshevists because they each make some pungent statements concerning things that are detrimental to the best interests of the medical profession, individually and collectively, as well as against the best interests of the public so far as medical affairs are concerned. The only difference between the two journals in the main is that the Indiana journal supports the A. M. A. in all of its endeavors, and the Illinois journal is a little shy on that. If my prayers are answered, the Illinois journal will come into the fold and be shouting for the A. M. A. as loudly as the rest of us, and I sincerely believe that the A. M. A. is worth all the support one can give it. It is what we physicians collectively make it. If it isn't good it is our fault. Our constant aim should be to make it bigger and better.

DR. E. A. HINES, South Carolina: For about fifteen years I have been doing the whole job of state secretary and editor of the journal. South Carolina has one of the smallest constituencies in the United States from the standpoint of membership, about 800. It has its problems as a result thereof. Dr. Long brought out an important point; that is, the appearance of the state medical journal. I have a conference every year with the publishers and go over every detail of the appearance of the journal, and I also confer with other experts, and if they have any worth-while suggestions to offer I make an effort to carry them out. Unless the journal looks well, the member is ashamed of it.

It is an important matter to have the president of the state society and the chairman of the publications committee visit various societies and uphold the journal in every way possible. That adds tremendously to the favor of the journal among the membership of the association if it can be done conscientiously. If not such a journal should not be published.

I have found it of value to be a member of the state press association of my state. Few doctors have been trained in newspaper offices—almost none. Few have the experience that they will get thereby. Therefore, it is important, I think, to keep in touch with the men who have had large expert experience. It is invaluable to me to attend their meetings, to know them personally and to be in a position to seek their advice about conducting the state medical journal.

I have found it of tremendous influence in my state to open various departments and to invite the keenest intellects of the younger men to become editors of these departments.

That has been one of the most valuable assets to the South Carolina journal in the last five years. Men who have been educated in the best schools, who are keen, expert from the scientific standpoint, have done more good in South Carolina in that work than any single thing that has been done for a long time.

Lastly, a department has been opened which is devoted to the interest of the woman's auxiliary. It is growing in importance and in influence, and I am confident that if this department is adopted by more state journals it will carry out many suggestions made here today by a number of observers of the woman's auxiliary.

OCULAR INDICATIONS IN OBSTETRIC PRACTICE*

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That wonderful organ, the human eye, from its intimate relationship to the central nervous system, and from its close association with the general and special functions of the body, may be said to furnish, frequently, accurate indications of certain most important disease conditions of general, or special, character.

The proper interpretation of conditions of the ocular fundus, as seen with the ophthalmoscope in the hands of the expert observer, will frequently serve to establish the diagnosis in the case of general disease or of affections of special organs, and will be calculated to present indications for treatment of vital moment, while offering valuable data for prognosis.

In no other portion of the body can the blood vessels be accurately observed and studied during life. The lessons to be learned are of the greatest value to the practitioner of scientific medicine, of whatever branch.

What definite suggestions are furnished by the detection of binocular papilloedema, which condition points, so accurately, to increased intra-cranial pressure, and all that such a state implies!

Of what great diagnostic importance is the ophthalmoscopic discovery of primary optic atrophy, which is such a valuable symptom in the beginning of tabes and in general paralysis!

What valuable indications are furnished by the various, visual defects, as the different types of hemianopsia, the presence of abnormal changes in the visual fields, and the sudden occurrence of amaurosis!

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How suggestive the information afforded by the presence or absence of the pupillary light reflex, and by the existence of the Argyll-Robertson pupil, so indicative of neurosyphilis!

Again, in chronic nephritis the diagnosis is, frequently, first made by the discovery of an albuminuric neuroretinitis, which condition fixes the expectation of life at less than two years from the beginning of the fundus changes.

Appearances in the fundus, frequently, suggest diabetes and enable the ophthalmologist to place the family physician on his guard. Moreover, the important assistance, in the diagnostic sense, rendered by ocular palsies, in anterior poliomyelitis, and in encephalitis lethargica, and the suggestions afforded by the so-called conjugate palsies, which place the intracranial lesion above the motor nuclei, cannot be over estimated.

All of the ocular indications, mentioned, are of inestimable value, and show the advantage of the coordination of the efforts of the ophthalmologist and of the practitioners of the other branches of the healing art.

A truce, however, to these general considertions! Let us limit the present discussion to the practical relationship of ocular manifestations, to the practice of obstetrics, which is the subject of this paper.

THE RETINITIS OF PREGNANCY

Retinitis, occurring in connection with nephritic involvement, in pregnancy, is a syndrome of the greatest gravity, both as regards the life and the vision of the mother, and the fate of the unborn child. Some modicum of comfort may be derived from the fact that this affection, so appearing, offers a far better prognosis than when it comes on in ordinary chronic nephritis, provided that the patient has not been the subject of such antecedent affection(1).

Most authorities maintain that the kidney involvement (with accompanying albuminuria, if such exists) and the retinitis, are due to a common toxic cause, incident to the pregnancy. If the pregnancy is brought to a conclusion sufficiently early, either accidentally or intentionally, recovery of visual and renal function may result. If, however, the condition should continue too long, the mother's life and vision will be most seriously jeopardized.

It should be noted that the retinitis may be present without albuminuria or the occurrence of much diminution of vision, provided that the macula lutea be not involved.

Generally, the visual loss is very definite. In case the least blurring of vision should come on in a pregnant woman, the patient should be subjected to a careful ophthalmoscopic examination, without delay.

The appearances of the fundus oculi, which are caused, in general terms, by hemorrhages, mostly flame shaped extravasations of blood in the nerve fibre layer of the retina, by exudates, and by oedema, will be readily seen, if present, and accurately interpreted by the skilled ophthalmologist.

In the retinitis of pregnancy, detachment of the retina, due to sub-retinal effusion of serum, is far more common than in other forms of renal retinitis, and the possible occurrence of this accident, so destructive to sight, must be borne in mind.

The optic nerve head is, frequently, simultaneously affected, constituting, with the retinal involvement, a neuro-retinitis of toxic origin.

Brought face to face with this most alarming condition, in the case of a pregnant woman, what should be done? From what we know concerning the lamentable end results of a pregnancy complicated with retinitis, the only logical conclusion to be reached is that the uterus should be emptied, as soon as possible, to save the life and vision of the mother. Delay may be fatal.

PERNICIOUS VOMITING OF PREGNANCY

Leaving out of consideration, the various theories concerning the causation of this most dangerous and distressing syndrome in pregnancy, the consensus of opinion, on the part of authorities of eminence, inclines to the view that the presence of toxicosis, incident to the dual life, is the most frequent essential factor in its occurrence. The special toxin is unknown.

In these cases, there are present pathological changes in the liver and kidneys, separately or combined. The worst type is the true toxemic vomiting with the liver involvement, complicated with nephrosis.

It is of vital importance that the medical attendant should recognize these toxemic cases, and attempt to secure relief before the vital organs involved have been hopelessly damaged.

There are found in such cases, marked dehydration and carbo-hydrate deficiency. It is needless to say, in such a meeting as this, that the most modern treatment is directed against these states, just mentioned. Glucose solution of from 5 to 10 per cent strength, given in doses of 1000 c.c. daily, by intravenous injection, or by hypodermoclysis or enteroclysis, is consequently the standard treatment advised by obstetric authorities. Likewise, in accordance with such expert opinion, if this treatment is carried out for a week, without result, the uterus should be emptied without delay, to save the life of the mother. (DeLee and Polak)(2).

Any assistance, which may be given the obstetrician, in the way of enabling him to diagnose this alarming state of hyperemesis, as early as possible, will be invaluable. The ophthalmoscope will, frequently, furnish such assistance. In the simple reflex vomiting of pregnancy, and in the so-called neurotic type of hyperemesis, the fundus oculi may be expected to manifest no definite variation from the normal. The same may be possible, to some degree, in the milder toxic forms, but in the severe toxic type, even in its very incipiency, the ophthalmoscope will, frequently, show a halo of cloudiness, due chiefly to oedema, around the nerve head (or a haziness possibly, extending further on to the retina) which will be most highly suggestive of general toxicosis, with all that this implies, and will be an indication to the medical attendant to adopt his treatment accordingly, as a life saving measure. The radical treatment required has just been mentioned.

AMAUROSIS AND PUERPERAL ECLAMPSIA

These puerperal conditions, so closely connected pathologically, are likewise, the results of the toxemia of pregnancy, and, as in the case of hyperemesis gravidarum, the toxic principles responsible, are unknown.

Puerperal eclampsia and coma are so distressing, and so indicative of extreme danger, that any definite warning of their threatened incidence is of great practical importance.

The ocular indications, at times, are strongly prophetic, and serve to put the attendant upon his guard.

The earliest danger signs are defective vision, spots before the eyes, colored lights, and sudden amaurosis, or complete blindness. "The blindness often precedes the coma or convulsions for several days, and is of great prognostic importance." (DeLee)(3).

The ophthalmoscopic findings, in such cases, are negative, but the presence of the pupillary light reflex, showing that the reflex arc is intact, is pathognomonic and proves that, for the moment, temporary pathological changes are confined to both visual areas of the cerebral cortex. Were such changes limited to one side, there would result homonymous hemianopsia, or half blindness on the same side of each visual field, *not complete amaurosis.*

If matters are allowed to take their course under such condition of the visual areas, other portions of the cerebral cortex will become similarly involved with coma and eclampsia resulting. In this preliminary amaurosis, the mental functions are not seriously impaired. In a case of pregnancy, therefore, in which sudden blindness occurs, with no intra-ocular changes discoverable upon ophthalmoscopic examination, the pupillary light reflex being retained and with possible evidences of renal or hepatic insufficiency present, the pregnancy should be terminated without delay. (DeLee)(4).

Emptying the uterus will, probably, prevent the incidence of eclampsia and coma and vision will, almost certainly, be restored in a short while.

The ocular indications in such cases, are infallible, and definitely point to the necessity of radical action.

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TREATMENT OF OSTEOMYELITIS AND OTHER INFECTED WOUNDS BY DRAINAGE AND REST*

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First, an acknowledgment of the inspiration and influence of the Mayo Clinic and of the Orthopedic Department upon the development of Surgery in this country.

The attitude of Sir Joseph Lister in applying the discovery of Pasteur to Surgical practice. The importance of the *prevention* of wound infection by antiseptic and aseptic methods.

The effort to control infection when once established in the wound has usually failed. This is due to the fact that no non-irritating antiseptic of sufficient potency which is safe to use has so far been discovered. Not only this, but the use of antiseptics has too often interferred with the healing of wounds and the correct union of fractures with parts in correct position. Many deformities and much disability have resulted because of injudicious antiseptic wound treatment and coincident neglect of splinting and immobilization in correct position.

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*Abstract of First Annual Lecture in Orthopedic Surgery, delivered at Rochester, Minnesota, Tuesday evening, January 25, 1927.

The importance of rest as a therapeutic agent in acute infections of bones and joints and other wounds has not been properly recognized. Historical reference to the work of early embalmers, and early surgeons in the control of putrefaction (Lanfrank, Pare, etc.). A review of the methods employed to secure healing of bone and joint lesions by means of rest (John Hunter, J. P. David, John Hilton, Hugh Owen Thomas, etc.)

In recent history the antiseptic method reveals a wide spread and almost frantic search for efficient antiseptics. This has resulted in marked over-emphasis of the importance of active antiseptic wound treatment. Immobilization of the injured and diseased part in correct position, reliance upon primary asepsis and rest for the wound have, therefore, been neglected. It had been supposed that bone and joint infections, fractures, etc., gave bad results largely because of inadequate care by less experienced members of the profession. The results of examinations in the military draft, however, seem to show that these poor results are in fact universal and due to short comings on the part of the profession as a whole and not to differences in skill in different parts of the country. Disability percentages were found to be as follows:

	Urban	Rural
Mal-union of fractures—upper extremity	1.5	1.6
Mal-union of fractures—lower extremity	2.2	2.7
Ankylosis of joints.....................	3.2	3.5

The application of the methods of Lister to the treatment of wounds have by no means yielded such fine results as when applied to the performance of aseptic surgical procedures. This suggests that primary asepsis is the fundamental and important thing and not antisepsis in the presence of infection. Proceeding from this assumption it has been found that osteomyelitis and other similar processes may in fact be controlled by the application of the principles of primary drainage and cleaning up of an infected area; immobilization of the diseased part in correct position, and protection of the wound aganist secondary and mixed infection. The program, in a general way as proposed, is as follows:

1. Primary asepsis or antisepsis to reduce the focal infection (at the point of acute disease or injury). It is not attempted to remove all infection or all diseased tissue. The patient is relied upon to take care of a part of his infection if he is properly assisted and protected.

2. Adequate drainage (wide open to the depths of the infected area).

3. A post-operative dressing or method that will protect the wound and the injured or diseased part so that the wound and the part are at rest and there is no opportunity for re-infection.

4. Immobilize (not simply apply a splint) so that movement, pain, and muscle spasm are entirely relieved, and all the parts in correct position for recovery with a minimum of deformity and disability.

Reference was made to the conclusions arrived at by the speaker during the War in which in a general way were revealed in a bulletin prepared and published by him at the Savenay Hospital Center in 1918.

THE TREATMENT OF ORTHOPEDIC PATIENTS IN BASE HOSPITALS

The considerations involved in the treatment of war wounds in Base Hospitals must be made to include not only the existing and imminent surgical pathology but the ultimate position and function of the injured parts as well. It is these latter points which, in both civil and military surgery, operators have been prone to overlook. A bleeding or infected wound, especially if of considerable size, makes an immediate and urgent demand upon the surgeon's attention. *There has been a tremendous accumulation of evidence in this war to prove, however, that wounds of whatever size and character heal better if all the parts involved are restored immediately to and adequately maintained in as nearly as possible normal anatomical relations.*

The different effects of such treatment upon the patient's ultimate career should be almost too obvious to require comment. *It is a fact, however, that not only because of the stress of war conditions, but because of the failure of surgeons to interest themselves in what for convenience must be called the orthopedic viewpoint, many of these patients in base hospitals for treatment or in preparation for convoy to the United States have not been dealt with adequately in this regard.*

The importance of rest as a factor of this treatment has been more fully demonstrated in chronic and in acute conditions (the works of Hilton, Thomas, and Ridlon), this is also illustrated in the Mayo Clinic by the work of Henderson in the use of massive bone grafts and the more perfect fixation of fracture fragments, which heal much better even in the presence sometimes of infection.

Numerous cases were quoted and lantern slides shown to indicate the exact technique of this method which is as follows:

1. Make a fairly large incision over the infected bone area. Spread apart the skin, muscles, fascia and periosteum just far enough to

afford access to the diseased area and no farther.

2. Chisel a window into the affected bone area large enough so that all diseased bone may be removed and so that there are no overhanging edges of bone over the diseased area. (Less extensive in acute cases.)

3. Clean out the diseased area gently with a curet or gouge, being careful to refrain from unnecessarily damaging the tissues undergoing repair.

4. Dry the wound and wipe out with 10 per cent iodin followed by 95 per cent alcohol.

5. Pack the entire wound wide open but not tightly with a sterile petrolatum gauze pack. Cover this with a dry sterile pad and bandage on.

6. Now perform any reasonable forcible manipulation necessary to place the parts in correct anatomic position for splinting (abduct the arm to 90 degrees in humerus cases; dorsoflex and supinate the hand in forearm and wrist cases; dorsiflex the foot to a right angle with the leg, in leg and foot cases, etc.)

7. Apply a plaster cast (preferably) or a suitable splint so that the parts are thoroughly immobilized in comfortable and correct position (additional weight and pulley traction, Balkan frame, or even ice tongs or bone pins may be used in these infected bone lesions associated with fractures and old fracture deformities which are being corrected at the same time as the clean up operation. It may be said that it is in the latter cases that some of the most gratfying results may be obtained by this method.

8. Finally, the cast is not to be split nor are windows to be cut in the cast until the wound dressing becomes necessary. And the wound is not to be dressed at all unless there is a rise of temperature or other signs of acute sepsis. As a rule, no dressing is necessary except on account of odor, and this may not be required for several weeks. In a majority of cases the patient treated by this method will go through to complete healing with a few dressings at intervals of from ten days to four weeks.

Fifty cases were presented in the form of a table and details of case history of four of these patients were given. Excellent results have been obtained without complications and without delay. The importance of thorough early drainage, wide open wound, primary sterilization, and the avoidance of reinfection by post-operative dressings, were emphasized. Attention was directed to the fact that with such infrequent dressings the surgeon himself could keep in touch with the treatment of the wound, and the patient. There is a great saving of labor and materials, and finally, and most important, the patient is spared the suffering attendant upon frequent dressings and makes more rapid and more satisfactory convalescence. Sound healing has been the rule. It has been found that in general, immobilization is more important for these patients than drainage and far more important than frequent wound dressings.

SYMPTOMS OF CANCER WITHIN THE RECTUM

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In considering the clinical evidences of so destructive a disease as cancer our thoughts instinctively search for first evidences of malignancy, but unfortunately this disease begins so insidiously and often gains so much development as to be beyond hope of cure before the sufferer is aware of its significance. It is inexcusable, however, if we overlook cancer when consulted on account of bleeding, diarrhea or tenacious constipation, abdominal pain or vague pains in the sacral or bladder region, or pain suggesting sciatica. Especially in the twenties and thirties, pains in any of these regions calls, for digital investigation of the rectum. Under 30, the symptoms from a rectal cancer are especially liable to be misinterpreted.

There is no really first symptom of cancer of the rectum but rather a consciousness by the patient that he possesses such a portion of his body and a fairly constant symptom complex of a persistent disturbed gastro-intestinal function together with an indefinable feeling in the pelvis without being able to actually locate the site of the trouble.

In considering the onset and duration of any complaint, we know, of course, that sudden onset and short duration point toward innocent trouble in proportion as gradual beginning and chronic course are ear marks of a more serious disturbance. But what is more significant than this is the circumstance, that in innocent rectal trouble the patient is comparatively free from symptoms in the intervals between his attacks, while in malignancy there are no periods of remission. Trouble having once started the tendency is to progressive increase both in frequency and severity of the symptoms. To illustrate, the person bleeding from hemorrhoids may be perfectly comfortable for months at a time, until something occurs to excite a recurrence; but the patient who has rectal hemorrhages due to a carcinoma will not be free from symptoms at any time but must expect his distress to become more acute with the duration of his illness.

Discharge: Without being able to state just when unsatisfactory evacuations were first noticed our patient has an unaccountable slight morning diarrhea, or, rather, several movements consisting of mucus and feces. This early change is particularly noticable in those who have had regular bowel movements previously. This is certainly significant, as it is in no way associated with the size of the tumor or the degree of obstruction. The defecation center receives a stimulus of something more remaining within the bowel, but our patient cannot dislodge it. Gradually this morning diarrhea becomes more disturbing, the desire to go to stool is imperative and followed by an explosive but unsatisfactory movement. From now on this frequent and imperative desire to empty the bowels dominates all other symptoms. By the end of six months our patient has to arise hurriedly in the morning and hasten immediately to the toilet, and may even need to get up once or twice during the night.

This is a suggestive symptom but by no means pathogomonic because it may be found in invagination of the sigmoid into the rectum, prolapse of the bowel, pedunculated polyp, and occasionally in large, pendant hemorrhoids. Disturbances of gastric or intestinal functions, grouped under the name of indigestion, are like constipation a common symptom in many persons who have no organic disease, but when they occur coincidently with the onset of rectal complaints they should be valued accordingly. Their presence in such cases favors a presumption of serious trouble as they are not an ordinary accompaniment of innocent rectal disease. This diarrhea is too often treated as simple colitis until the opportunity for removal of the causal cancer is past. With any obstinate bowel irregularity, at any point, the rectum should be examined, not once but repeatedly.

Hemorrhage: Up to this time there is no surface disintigration but about now ulceration begins and a sanious discharge containing shreds of broken down tissue escapes at first only during defecation, but more or less continually later, as the sphincters lose their usefulness. This discharge excoriates the anus and skin about the parts, and has the odor of decayed flesh which when once recognized is never forgotten. It is similar to the odor of cancer of the uterus. From now on bloody stools are the rule.

Frank hemorrhage from cancer occurs frequently but it is seldom profuse enough to be dangerous, although the anemia produced by the repeated loss may be an element in hastening the end. The encephaloid cancer is prone to bleed freely because it breaks down so easily and so early, but the scirrhus growths bleed only sufficiently to smear or streak the stool.

There are several features of this bloody stool which help to differentiate cancer from non-malignant conditions. Hemorrhoidal bleeding occurs nearly always when there is an increase in intra-abdominal pressure, as in attempts at stool and rarely at other times, in carcinoma it may occur at stool for the same reason, but often independently owing to erosion of a bloodvessel. In some cases of carcinoma the first intimation the patients have of trouble is when they find their clothes saturated with blood on arising in the morning. There is a misapprehension about the significance of the kind of blood lost which may lead to erroneous conclusions. It is said to be clotted and dark in carcinoma and fluid and red in nonmalignant conditions which simulate it. This is not to be accepted without qualification, as the color does not depend upon the nature of the lesion, but on the point from which the bleeding takes place and the length of time the blood has been retained. Hence, while it is true that bleeding from piles is generally bright red, we must remember that a similar condition may occur in carcinoma implanted low down. The frequent association of hemorrhoids with cancer must always be kept in mind, even the absence of visible and occult blood does not exclude a cancer.

Large internal hemorrhoids are sometimes a sign of cancer, especially if they have developed rather rapidly in an elderly patient who has had a normal rectum with no bowel disturbances. It means that some obstruction to the return blood flow from the rectum has developed and this obstruction is usually malignant in nature.

Pain: The pain of rectal cancer varies greatly with the nature of the neoplasm, its location and the stage of the disease. At first it is not severe and our patient supposes he has some simple rectal or intestinal ailment and dismisses it from his mind because he objects to an examination. The mild character of the symptoms for some time is peculiar to cancer situated above the middle of the internal sphincter, the bowel having so little sensitiveness that considerable growth and even ulceration may exist without causing much suffering. When the growth encroaches upon neighboring structures either by stretching or pressure of the cancerous mass itself or of the infected glands there is a variety of symptoms referable to the urinary function in males, marked subjective pelvic disturbance in both sexes, and distressing bearing down pains, boring headaches and pain or cramp in the lower extremities.

When the disease is below the sphincter, there is great pain and violent tenesmus. This suffering itself may be of assistance in making an early diagnosis. If the anus is eroded, the pain is similar to that of irritable ulcer or fissure and begins as early as the growth pushed through the mucous membrane. The later pain is occasioned by irritation of the ulcerated surfaces by the feces.

A growth low down in the anal canal causes early and acute suffering, higher up the symptoms are less sharp, come on later, and are likely to be such as grow out of interference with passage of gas or stool, while midway (the widest part of the rectum) pain is negligible until late in the disease, when changes due to destruction of tissue will dominate the picture. Situated in the sigmoid, abdominal symptoms become more and more prominent and there are subjective and objective signs referable to the lower left side of the abdomen.

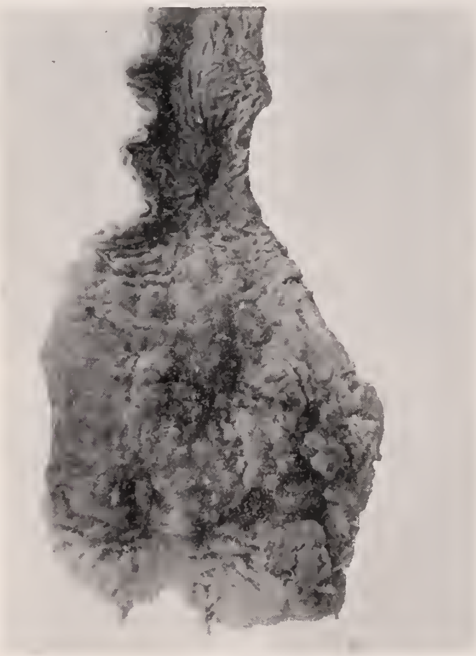

Figure 1. Ulcerated Carcinoma of the Rectum.

Each condition must be carefully studied and diagnosed, as each requires special attention.

Ulceration: The ulcerations of the cancer that produces the fetid discharge are of two kinds; that above the stricture, and that of the growth itself. Ulceration developing above the growth differs from the cancerous necrosis in that it is superficial in depth, has a clean, smooth base, and low, even edged. It results from pressure of and toxins absorbed from the retained and hardened feces that are lodged in the dilated portion of the rectum immediately above the obstruction. When the obstruction is relieved, these masses are found to be dry and of almost stony hardness, and are so imbedded in the tissues that when removed they leave ulcerated spaces beneath them.

Degenerating Cancer: The ulceration of degenerated cancerous tissue is different. Early in the disease the normal mucous membrane is moveable over the growth, but the cancer soon breaks down; this degeneration may occur at one or several places simultaneously and the mucous membrane be honeycombed with ulcerating spots through some of which the cancerous mass may protrude. Ulceration begins at the central or denser parts of the cancer and is not limited to the super-imposed mucous membrane, but invades the deeper structures and in some cases extends into the neighboring organs. The bladder frequently is opened and a urinary fistula produced, the urine escapes through the rectum; and sometimes the feces are forced into the bladder and through the urethra, causing excruciating pain. This is one of the most urgent indications for colostomy. The prostate or seminal vesicles in the male, or the retrovaginal septum in the female, may be destroyed. When the prostate or urethra are involved obstruction to urination begins and if the disease extends to the bladder wall, cystitis develops. Smith records a case where the disease opened into the hip joint. While the center is degenerating the periphery is advancing into new tissues. Around the edge the growth together with the inflammatory reaction raises the border and gives the ulcer a crater-like appearance (Fig. 1). The muscular tissue seems to have a greater resisting power and prevents somewhat the extension of the ulceration process. The extension, however, progresses irregularly and creates a ragged edge. Gangrenous cicatrization occurs, the rectum grows shorter until it may be only one-half to one-fourth its normal length. This contraction and the associated loss of fat about the parts produces the funnel-shaped anus so pathogonomonic of cancer.

Obstructions: Obstruction is variable in its symptoms; sometimes advanced scirrhus cancer which has narrowed the lumen of the bowel until it will hardly admit the end of the finger will cause little or no obstruction. Not infrequently the passage of feces is never much interfered with because ulceration begins early and the growth sloughs off enough to keep the passage open. When obstruction exists and is located in the lower rectum or at the anus the feces are ribbon-like in shape or small pea-like balls or else frequent efforts at defecation bring away small amounts of feces mixed with muco-pus and resembling diarrhea. Blood is frequently mixed with the feces, suggesting a dysentery instead of the real disease.

Ulceration into the surrounding tissues with the production of an abscess and fistula allows the extravasation of feces and often a large dissecting abscess. The obstruction when present is similar to that of simple stricture and not in any way pathognomonic of cancer. The patient's history does not differentiate the disease and all depends on a physical examination, which requires great care and delicacy.

Cancer in this region is of rapid growth and if a patient asserts the stricture has existed for many years it is evidently not malignant, although it must be remembered that carcinoma may be engrafted upon any benign growth or ulceration.

In the encephaloid cancer the passage of the feces is not so frequently interfered with because ulceration begins early and the growth sloughs away enough to keep the passage open. Blood, mucous and pus mixed with the feces suggests a dysentery instead of the real disease. Ulceration into the surrounding tissues with the production of an abscess and fistula allows the extravasation of feces and often a large dissecting abscess.

Cachexia: Cachexia and loss of weight are late symptoms and of no clinical importance and are coexistant with metastatic growth in the liver, lungs, kidneys and other organs, all of which accelerate the general break down. The appearance of vigorous health is often maintained until late in the disease.

Lymphatic enlargements in the groin are to be found only in cancer involving the anus. When the malignancy is confined within the rectum proper the sacral and lumbar lymphatics will be involved, and are palpable along the spinal column and deep in the pelvis.

The lymphatics in the hollow of the sacrum and the mesentery which often cannot be reached by digital palpation through the rectum are the filters for the rectal canal. A correct idea of their condition cannot be revealed except by exploratory laparotomy.

Another point in the diagnosis is that these enlarged glands or the cancer mass itself may produce pressure symptoms in parts quite distant and independent of the rectum. Pressure on the iliac vein will cause edema of the legs, a condition that occurs frequently in the later stages of the disease.

Lines of Extension: Rectal carcinoma does not extend early; it tends for a long time to remain localized. This fact would make its radical removal a very hopeful undertaking if the growth were discovered promptly.

Epithelioma at the anus extends by continuity through the skin to the scrotum, vulva, vagina and up into the rectum. The inguinal glands are involved and also the middle hemorrhoidal through which abscesses of the ischio-rectal fossa arises. Within the rectum cancer extends to the contiguous genito-urinary organs and backward to the coccyx. The retro-rectal and hypogastric glands are involved.

Thus we have recited the several symptoms of malignat growth within the rectum in the chronological order in which they have more frequently appeared in our experience. We must always have in mind the symptom complex and anticipate rather than wait for cardinal signs. A presumptive diagnosis of rectal cancer supplimented by repeated careful examinations will disclose the several symptoms which, when properly evaluated, will make for an accurate and true diagnosis, especially as they are supported by corroborative findings.

ALLERGY

H. D. MYERS, M. D.,
Howells, Nebraska.

Some years ago I was called to see a male of 36 years who was troubled more or less with articular rheumatism; being very anxious to try out sodium salicylate on this patient I prescribed 15 grains every 4 hours. After the second dose I was called in haste and found my man lying on a lounge, sweating profusely, broken out in a rash, headache, ears ringing, subnormal temperature and decidedly anxious, with difficult breathing.

Observation: A quantitative hypersensitiveness. Most any one, with massive doses will present the same symptoms, but this individual was very sensitive even to small doses.

The second case is a woman of 53, very active, never been sick in her life except a slight flare up of her thyroid after the "flu" a few years ago. Is a printer by trade, and has hay fever beginning in the middle of August and continuing until frost. The pollen from rag weed sets up a decided conjunctivitis, sneezing and rhinitis. Bronchial asthma complicates the hay fever and of late years her attacks of asthma have been more frequent, even the contact of house plants she finds causes an exacerbation. She says cloudy weather and "catching cold" always makes her asthmatic.

Observation: Hypersensitiveness to various pollens, patient volunteers information that she had observed when hay fever was at its height she could not eat eggs without provoking an asthmatic attack.

The third case is a young man, medical student attending school in Omaha. He finds upon his return home he always has an asthmatic attack. At a specialist's suggestion he has had his nasal septum straightened, and turbinated bones cauterized, and received only temporary relief. He finds on returning to Omaha his attack is relieved and has no recurrence until his return home. Is disgusted with himself and cannot understand why he formerly stayed at home continually with no attacks of asthma but has attacks every time he returns now.

Observation: This brings up a decidedly interesting point in allergy. This patient was immunized while at home because he was daily in contact with the irritant. On leaving home and not coming in contact with the irritant, he lost his immunization. Feather-ticks caused his trouble. He is hypersensitive to animal proteins.

Our fourth case is a woman of 36, who took sick during the night. Says she went to sleep feeling fine, but was awakened after midnight, covered with raised blotches on the skin all over the body. These blotches appeared blanched and itched severely. She complained of peculiar feeling in chest and was unable to get her breath freely. A hypodermic of epinephrin relieved this attack almost completely, and we found on talking her trouble over that she had eaten fresh pork the day before in great abundance. This with the fact that she was menstruating and had an upset stomach seemed to be sufficient reasons for the symptoms.

Observations: Hypersensitive to foodstuffs. It is interesting to note that pork is more apt to produce allergic symptoms than any other meat, which probably accounts for the Hebrew prohibition.

Male of 52, big barrel chest, never been sick in his life, comes complaining that he develops a cough which stays with him all winter, when he has occasional attacks of asthma. He spits and hawks all winter and colds seem to make his cough worse. On further examination I find a bad case of pyorrhea and patient owns up that he has an occasional attack of lumbago. At a fellow practitioner's suggestion I used auto-vaccine and got wonderful results. It relieved his asthma for years at a time. But I afterward found that stock vaccine gave about the same result and my theory was disproven.

Observation: Sensitizing properties to bacterial proteins is probably not proved.

Twice have I had people come from Colorado Springs or Denver on a visit to Howells to whom asthma was unknown while in Colorado, who developed an attack of asthma the first night on their stay in our country, with high humidity in the atmospheric air and the only relief they obtained that was permanent was to return to Colorado. Probably a miasm is to blame for this trouble whose presence is in the air at these altitudes.

And lastly anaphylactic shock. Whether allergy has anything to do with anaphylactic shock I am unable to say. I don't mean serum sickness, which follows protein sensitivation, I mean the real shock that you and I have seen and the memory of which is far from pleasant to say the least.

Occasionally they die and then we say "never again." Van Leeuwen comes to these conclusions on allergy and anaphylacy is shock.

1. Allergic diseases are often inherited—anaphylaxis is not.

2. Allergic symptoms are sometimes shown the very first time that a person comes into contact with the incriminative substance.

3. Allergy can only with difficulty and irregularly be induced experimentally in animals, anaphylaxis is easy to obtain in animals, whereas its existance in man has not been proved. Moreover allergics are not more readily sensitized to foreign proteids than normal men. Allergy cannot be transmitted passively to animals; in anaphyaxis this experiment usually succeeds.

4. The symptoms of allergy differ largely from those of anaphylactic shock but show much likeness to those of drug idiosyncrasy, whereas drug idiosyncrasy cannot be identical with anaplylaxis, since drugs are considered not to give rise to formation of antibodies are consequently they are not anaphylactogens.

Etiology of bronchial asthma. (These are not my statistics).

50 per cent have inherited the predisposition.

50 per cent suffered in childhood from facial eczema.

30 per cent have suffered from bronchitis.

Virtually all seem to have skins and mucous membranes more permeable than the individual who does not have bronchial asthma. Why some become more susceptible to the allergen I leave to your judgment. I could find no answer to it.

Treatment of Bronchial Asthma: Adrenalin stands out supreme as the best remedy for bronchial asthma. Nothing equals it. Give it hypodermatically in ten minim doses every four hours. I generally supply them with a hypodermic syringe and teach them its use.

Eli Lilly comes out now with a drug fedrin, active alkaloid principle of ma huang, an Asiatic drug, which gave me the same results in three cases of bronchial asthma that adrenalin did and you are able to give it in capsules. I have had little experience with this drug but what I have had has been very promising.

Mulford puts out thyrocalx, a compressed tablet with five grains calcium and a little thyroid and para-thyroid which has been very helpful as an adjunct or as regular treatment in some cases.

Non-specific treatment: Koch's tuberculin in graduated doses with von Pirquet's cutaneous test, I tried once with apparently poor results. I am convinced this is a hospital treatment only.

Diet Suggestions: Avoid meat, fish, sometimes eggs; however sometimes it seems almost anything will provoke an attack.

Before closing I want to call your attention to a statement of Dr. Nathan S. Schiff of New York Post Graduate Medical School in Vol. 3 of International Clinics, just out, who says enuresis in childhood may be considered an allergic phenomenon until proved otherwise by diagnostic skin tests.

A CASE OF ANEURYSM OF THE VERTEBRAL ARTERY

A. D. DUNN, M. D.,
Omaha, Nebr.

It is rather seldom that one has the opportunity of viewing the past and present illnesses in one autopsy specimen.

The case was seen for the first illness about eight and a half years ago, and several years ago was reported in an article entitled: Pachymeningitis Hemorrhagica Interna, etc.(1)

The patient, a widow, aged forty-eight years, had enjoyed excellent health up to the current illness. There was no history of trauma. She was taken ill suddenly with an intense pain in the back of the head and neck, which was quickly followed by general convulsions. She was unconscious for several hours. When seen, twelve hours after the insult, the patient lay on her back with her head drawn slightly backward. She was conscious. The important physical findings were rigidity of the neck, extreme muscle hyperesthesia, the patient crying out when moved, a well-marked Kernig's sign, slight right facial weakness, protrusion of the tongue slightly to the right, absent abdominal reflexes, exaggerated knee-jerks and ankle-jerks, with a suggestion of Babinski's and Oppenheim's signs on the left side. The fundi were normal. The pulse was 84; the systolic blood pressure was 190. The urine examination was negative. The leukocyte count was 12,000. Lumbar puncture brought a uniformly bright, bloody fluid under increased pressure. The Wassermann tests of both spinal fluid and blood were negative. Protein and colloidal-gold tests were unsatisfactory on account of the admixture of blood. The number of white cells seemed proportional to the amount of blood. Cultures and smears of the spinal fluid stained for bacteria were negative. The spinal fluid four days later was brownish in color but still under increased pressure. During a period of three weeks there were four apoplectic insults with convulsions and coma followed by marked exacerbation of the headache. Fresh blood was always found a few hours later in the spinal fluid. Febrile manifestations, delirium, hallucinations, stupor, headache, hyperacusis, hyperesthesia, restlessness, irritability, insomnia, emaciation and extreme asthenia were prominent features in a severe illness which required ten weeks of hospitalization. Convalescence was slow and the patient did not regain her normal state for eight months.

The noteworthy features in this case were the registration of fresh cerebral hemorrhages in the spinal fluid after each cerebral insult, the improvement in the well-being of the patient following lumbar puncture, and the rapid hemolysis of the red corpuscles in a spinal fluid, which changed rapidly (a matter of two or three days) from a red to a brown and then to a bright yellow. There were no apparent etiological factors unless one could impugn an extensive buccal infection, which was removed during the convalescence, and an essential hypertension. The patient was not an alcoholic, not a paretic, not a dement, nor a senile. She suffered from no chronic disease, except an essential hypertension, the systolic blood-pressure varying from 150 to 200. There has been no recurrence of the trouble during four years. She is reported to still have hypertension, with systolic blood-pressure 235, diastolic 160, and suffers occasionally from headache. Otherwise her health is stated to be excellent.

The patient returned to observation June 17, 1926, about eight and a half years after previous illness. Her chief complaint was weakness, difficulty in walking and feeling terribly tired. She stated that she could not walk straight and felt "decidedly old". She complained of a bad taste and that her vision was poor. (She read many books in the hospital). She thought that she had failed appreciably during the past year, having had two very hard years after the loss of a daughter under tragic circumstances. She stated she got out of breath on exertion, that her heart pounded but that her feet did not swell. She also complained of "knotting" in her legs at times. There has been a decided frequency in nocturnal urination but no increase by day. There had been dizziness without tinnitus but no headache until 43 hours before death. Her mentality had been normal except that she had been depressed. There had been no gastro-intestinal symptoms.

The patient was a well developed, well nourished middle aged woman. She appeared depressed and older than her years. She was uncertain on her feet and her gait somewhat staggering.

The examination of the head was negative. Her teeth and tonsils were out. The throat appeared normal. There was no tenderness over the sinuses and no enlargement of the thyroid or the lymph glands of the neck.

The apex beat lay 9½ cm. from the median line in the 5th interspace. The heart was 12 cm. broad at the 4th interspace. The aorta was 6 cm. at the second. The sounds were normal except for a moderate accentuation of the aortic second.

Examinations of the lungs, abdomen and pelvis were negative.

The examination of the cranial nerves, including fundi, smell and taste, were negative except for a bilateral rotary nystagmus. Rombergism was decided and the gait staggering. The tendon reflexes on the right side were slightly increased, on the left normal. Occasionally a suggestion of an extensor Oppenheim and Babinsky response on the right was obtained. There was no selective weakness of individual muscle groups. Muscle rigidity and Kernig's sign were absent. Ankle clonus was absent. There was no adiadokokinesia. There was no ataxia on the heel to knee and finger to nose tests. There was no disturbance in sensation to finger, pin, cotton or heat and cold. Vibratory sense was absent on the tibiae and anterior superior spines of the ilium. There was no asteriognosis. The findings remained remarkably constant throughout the entire period of observation. The blood pressure during the patient's stay in the hospital varied from 150 to 200 systolic and diastolic 80 to 140.

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(1) American Journal of the Medical Sciences, June, 1922, No. 6, Vol. CLXIII, p. 819.

The urine before entering the hospital showed albumin +1, hyaline casts +3 and granular casts +1, an occasional pus cell, some epithelium but no red blood corpuscles. At no time were there urinary findings of moment after the patient was at rest in the hospital.

The blood showed a hemoglobin of 90, red blood cells 4,640,000, leucocytes 7,400 with 72% polymorphonuclears and 28% mononuclears. (6-17-26). The Wassermann was negative.

The spinal fluid showed no increase in pressure, sugar 80 mgms. cells normal, globulin not increased and gold 000 000 000 0. (8-11-26)).

The P. S. P. test was 25% in 2 hours and the nonprotein nitrogen was 21 mgms. (8-10-26).

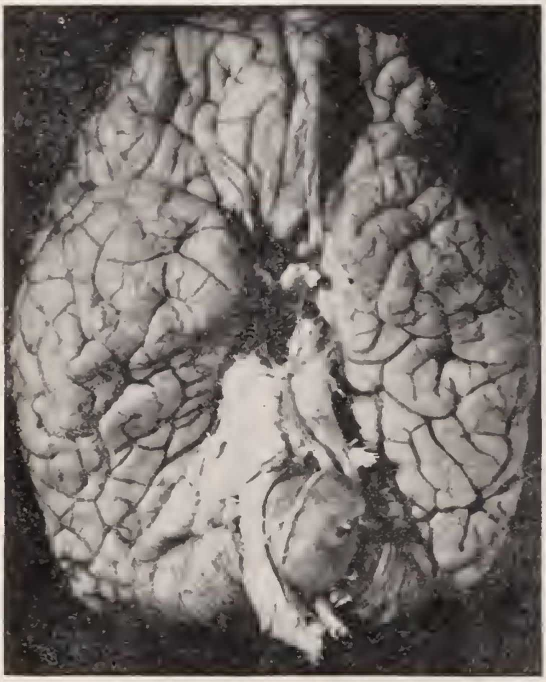

Fig. I. View of base of brain showing the aneurism in the crotch of the vertebral arteries and displacing the brain stem.

During that patient's stay in the hospital her morale seemed to improve but there was no particular change in the ataxia or strength. Shortly before death she became more depressed and the day before she died she stated she had a feeling as if there were nothing in the back of her head — that it was "empty and gone".

It was noted the day the patient died that she did not talk clearly. At 10 p. m., while returning from the bath room, the patient became very weak and had to be helped into bed. She was decidedly pale, her pulse fast, her extremities cold, and it was noted that she was talking somewhat irrationally. She went to sleep about 11 p. m. and was noted as dozing and talking. At 1:45 a. m. she became decidedly cyanotic, perspired freely and died suddenly fifteen minutes later. At no time was there vomiting or choked disc.

In the absence of any indications of serious organic heart disease during a period of observation of approximately two and a half months a coronary artery death was ruled out. Taking into consideration the nervous manifestations plus sudden death interference with the circulation somewhere in the basilar artery system seemed the likely explanation.

Clinical diagnosis — residue of an old hemorrhagic process in the posterior fossa with involvement of cerebellum or of the tracti spino-cerebellares, chronic nephritis (arteriosclerotic) minimal degree, cardiac hypertrophy, interference with basilar artery or some of its branches, causing sudden death.

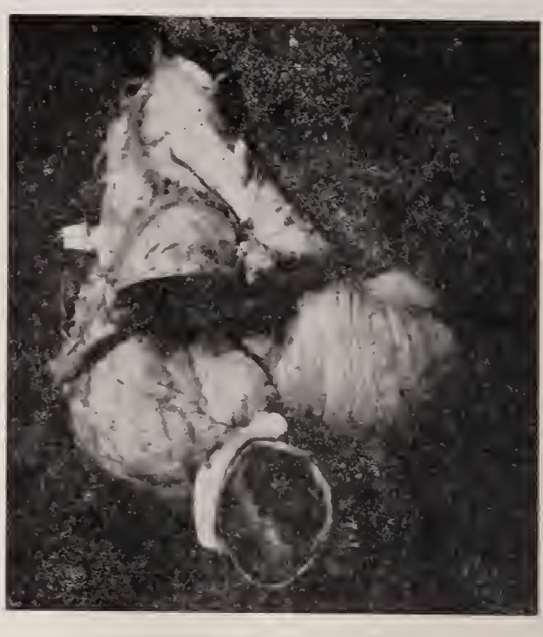

Fig. II. Sectional view showing the laminated blood clot, the compressed cord and the wall of the aneurism. The exit of the artery can also be seen.

It must be emphasized that there was no headache until 48 hours before death. The physical examination gave nothing of significance except a moderately enlarged heart. The findings remained constant throughout the entire period she was under observation, which was about six weeks. At no time until two days before her death was there headache. The chief symptoms were the drunken gait, the rotary nystagmus and the weakness. Brain tumor was excluded on account of the absence of headache, vomiting and choked disc. With negative blood and spinal fluid lues was unlikely. Encephalitis was ruled out both on the absence of a history of infection and negative spinal fluid. A degenerative process in some manner associated with the illness of eight and a half years ago was thought more likely.

The autopsy, which was performed by Dr. F. W. Niehaus, showed little of importance beyond moderate cardiac hypertrophy and some general arteriosclerotic manifestations and arteriosclerosis of the kidneys. The tissues of the brain were sent to the University of Nebraska for study. Dr. A. J. Miller will give his findings.

Dr. Dunn: In retrospect there are several things of interest. First, is the difficulty of explaining the hemorrhagic condition that existed eight and a half years ago unless we are to assume that the aneurism had existed for that length of time or unless the thickening of the dura mentioned by Dr. Miller is a result of the old hemorrhagic process. If the aneurism were responsible for the hemorrhage it must have been very small at the time and its progress exquisitely chronic. Secondly, the marked distortion of the medulla and upper cervical cord by pressure giving rise to so few symptoms is noteworthy. Lastly, the hemorrhage into the medulla is significant because in some manner it must have been associated with disturbance in the basilar artery circulation through pressure on the remaining vertebral artery that wound its course over the aneurysmatic tumor.

In discussing the causes of hemorrhagic spinal fluid in the article from which the history of the patient's previous illness was quoted the following statement was made:

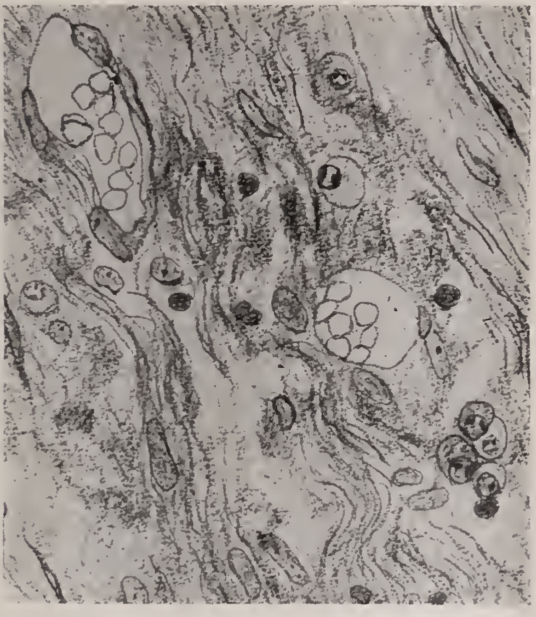

Fig. III. Camera lucida drawing of wall of aneurism. Note the young blood vessels, young connective tissue and infiltrated cells. Few muscle cells.

"After we have excluded puncture hemorrhage we have to consider hemorrhages from (1) intracerebral lesions; (2) trauma; (3) diseases of the meningeal vessels, such as arterio-sclerosis and aneurysm; and (4) pachymeningitis hemorrhagica interna. In order for the blood to appear in the spinal fluid from an intracranial lesion it must spill either into the ventricles or into the subarachnoid space, from which the cells rapidly diffuse throughout the water bath enveloping the cerebral axis. Blood from a cerebral hemorrhage or hemorrhage into a tumor would reach the spinal fluid only insofar as it penetrates the subarachnoid space or the ventricles. Hemorrhages into the internal capsule sufficiently severe to satisfy either of the above conditions are usually rapidly fatal. Furthermore, the resultant paralyses are usually very definite if the patient survives the original insult. The previous clinical course should establish the diagnosis in cases of hemorrhage from a glioma. Hemorrhage from trauma can be excluded by the history and the physical and roentgen-ray examinations. Hemorrhages from small aneurysms and following arterial changes in the meningeal arteries would seem impossible to differentiate from pacymeningitis hemorrhagica interna, for clinically they equal the same thing."

DISCUSSION

Necropsy Report by Dr. A. J. Miller:

Gross Description.

Dura. Along the falx anteriorly there are ten or more very irregular and jagged spicules of bone. The largest measures 17 mm. by 21 mm. by 5 mm., and the smallest less than 1 mm. The dura is not thickened. On the inner surface there is a diffuse coloring of faint brown.

Brain. The only findings are at the base. Fig. 1. In the crotch formed by the union of the vertebral arteries is an egg shaped mass 27 mm. by 50 mm. It is entirely within the meninges but has markedly flattened the medulla by pressure. Fig. II. The surface is quite smooth but in it strands of connective tissue can be seen. The right vertebral artery is stretched over the mass so taut that it is collapsed. The left vertebral artery enters the mass a little on the left side near the smaller end and exits near the larger end which is tucked firmly in the crotch of the arteries. Between the entrance and exit of the left vertebral artery and about in line with them is the origin of the left inferior posterior cerebellar artery arising from the mass.

Section shows the wall to be similar to artery in gross structure and it is continuous with the wall of the artery. In it are several plaques of degeneration and infiltration. The lumen is almost filled with laminated blood clot that varies in age, that next to the lumen is very recent. There is still a passage way for the blood through the mass, the left wall of which is the wall of the aneurism and the right is blood clot. The posterior inferior cerebellar artery communicates with this passage way so that it can still function. The flattening of the bulb is marked and in it near the aneurism a narrow zone of brown blood pigment is seen.

Arteries. The basilar and other large arteries at the base are quite sclerotic and it is the senile type. The aorta and other large arteries of the trunk also contain the senile type of sclerosis to a moderate degree.

Microscopic Description

Medulla. In the region of small vessels there are small hemorrhages. These are all recent. Near the pia is some old blood pigment. There is a moderate amount of nerve cell atrophy. A few cells are definitely sclerotic.

Wall of aneurism. The wall is about 1 mm. thick. Much of the musculature is still preserved but intermingled with much connective tissue. There are numerous localized areas of calcium salt infiltration. Fatty degeneration is practically nil, only a very few droplets in localized areas. The striking feature is the vascularization of the media. Fig. III. Quite large newly formed vessels are seen which are surrounded with young connective tissue cells and some cellular infiltration consisting of plasma cells and lymphocytes. These lesions resemble those produced by infectious agents. Bacteria and treponema pallidum were carefully looked for but none found.

Dura. Sections show the spicules to be of the structure of bone. No evidence of old or recent hemorrhage about them is seen.

Pathology found. 1. Aneurism of left vertebral artery at the origin of the left posterior inferior cerebellar artery, infectious in origin. 2. Pressure atrophy, hemorrhage and sclerosis of the bulb. 3. Arterio-sclerosis, senile. 4. Osseous plaques in dura.

Summary. The osseous plaques may be either neoplastic or the result of metaplasia at the site of chronic inflammation. It is not possible to determine which is the correct interpretation. The aneurism of the vertebral artery is an old one as evidenced by the old blood, the old scar tissue and the calcium salt infiltration in the wall. The cellular infiltration in the wall. The cellular infiltration, the young connective tissue, especially the blood vessels in the media indicate that is infectious in origin. The specific etiology is not found. The blood pigment in the bulb is old, and is evidence of hemorrhage. The nerve cell changes are the result of pressure. Death may be rationally attributed to a vascular insult of the floor of the fourth ventricle for which the recent hemorrhages near small vessels are evidence.

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THE ANNUAL MEETING AT LINCOLN

A more pleasant and more profitable annual meeting than the one just closed at Lincoln has perhaps never been held in Nebraska. With three exceptions the essayists were on hand when called. The discussions were generous and to the point. The honor guests were well received and brought real messages to the members.

Dr. E. T. Bell, of the University of Minnesota, in "Etiology and Pathology of Gall-bladder Disease" said there was no evidence that focal infection plays any part in gall-bladder disease, that an ascending infection is not proven, that appearance of a section of the margin of the liver is not evidence of the condition of the entire liver. He prefers to give tetraiodophthalein in pills for cholecystography.

Dr. T. C. Witherspoon, of Butte, Montana, discussed, in a very lucid manner, anatomy, physiology and pathology of the gall-bladder and gave his conception of the functions of the viscus and of the bile.

Dr. Ralph Matson, Portland, Oregon, speaking on operative collapse therapy in the treatment of tuberculosis spoke very highly of the good effects of phrenicotomy and thoracoplasty.

Dr. Harry Berger, of Kansas City, speaking on the medical treatment of pneumonia in children, suggested that true lobar pneumonia is rare. He said the mortality was about the same as it was thirty years ago and would so remain under our present concept. He thinks bronchial pneumonia as a primary condition must be very rare. The outcome depends on the particular kind of germ and its virulence. In treatment, rest and quiet is important beyond all other measures. He never saved a patient by oxygen which he called a grand-stand play to make an impression on the family.

Dr. C. F. Hegner, of Denver, considered the surgical diseases of the chest in a very able manner the last afternoon of the meeting to an audience all too small for the kind of message he brought and the distance he came.

Dr. Bertha VanHoosen, Chicago, obstetric surgeon, who was the guest of the Nebraska Association of Medical Women, was introduced at the Wednesday afternoon session and touched briefly on some obstetric problems, among other things, advocating the use of scopolamine 1/100 gr. without morphin to produce twilight sleep without having blue babies. She also demonstrated a special obstetric belt for pendulous abdomen as an aid to the patient's powers of contraction, something, the value of which the writer has fully demonstrated in his own practice.

The banquet was served to over four hundred —more than ever sat down at a like event.

The entertainment committee covered itself with glory by presenting the Lincoln Little Symphony Orchestra, the Weaver singers and several athletic and esthetic dances.

Dr. B. R. McGrath, Grand Island Surgeon, was re-elected secretary-treasurer. Hastings was selected as the next place of meeting due to the persuasive eloquence of the veteran Dr. J. V. Beghtol. The history of the past has shown that it is necessary to demonstrate about every ten years, that only the two metropolitan cities can satisfactorily house and entertain the annual meetings and it will be interesting to learn whether history will reverse itself. Let us hope it may.

The number of physicians registered during the session was 368.

SAMUEL HAHNEMANN, FOUNDER OF HOMEOPATHY

Let us devote a few minutes to the life and work of the founder of the most famous healing cult of modern history.

Samuel Hahnemann was born in April, 1755, at Meissen, near Dresden, the capital of Saxony. His father was a painter of Dresden china and expected his son to follow in his footsteps. The son, however, displayed a love of letters. At the age of 20, with twenty crowns as his fortune, he went to Leipsic to study medicine. He maintained himself by translating works out of the Latin, French and English into German. He received his medical degree at Erlangen in 1779. Later he pursued his studies at Vienna.

He settled at Dresden in 1784 and became director of a large hospital. Here he discovered a new soluble salt of mercury and published a monograph on arsenical poisoning. After four years he returned ot Leipsic. Here he translated Cullen's Materia Medica from the English. While experimenting with cinchona bark he took a large dose which was followed by a chill and from this he conceived the idea of *similia similibus curantur.* While carrying similar experiments with veratrum album he gave a strong dose to relieve a severe colic and noted that before relief came the symptoms were much aggravated. This led him to the theory of trituration, dynamization and infinitessimal dosage, reasoning that the smaller, subdivided dose would effect a cure without unpleasant symptoms. His Organon of Medicine was published in 1810. Then followed his Materia Medica. His system involved the administration of medicine, each separately, by itself. This interfered with the business of the apothecaries since there were no prescriptions to be compounded, so they had a law enacted forbidding physicians to dispense their own medicines. In consequence Hahnemann was obliged to leave Leipsic. The Duke of Anhalt-Koethen offered him a refuge and appointed him court physician on his removal to Koethen.

Having lost his first wife, in 1835 he married a French woman and moved to Paris where he enjoyed a great reputation until his death in 1843.

Hahnemann was universally acknowledged to have displayed remarkable courage, perseverance and genius. He was a man of unblemished purity of morals and his life, as well as his writings, was characterized by strong natural piety.

Homeopathy spread over Europe, Asia and North and South America during the first half of the 19th Century. The first Homeopathic medical college in the United States was established at Allentown, Pa., in 1835. Later Homeopathic colleges were established in all the larger cities and a number of state universities established Homeopathic medical departments. By 1890 there were about 14000 Homeopathic physicians in the United States. Soon after this period, with the general acceptance of the germ theory of disease, the development of laboratory methods and the era of rational medicine, Homeopathy began to decline and many members of the so-called school accepted the olive branch held out by organized regular medicine and allied themselves with the regular organizations. Today but two of the so-called Homeopathic medical colleges remain in the United States and they are teaching regular medicine. The Hahnemann college of Philadelphia is, and always has been, a Class A school, and is recognized by every examining board in the United States.

Homeopathy must be credited for having given a death-blow to polypharmacy, heroic dosage, to have aided in the general recognition of the principle of *vis medicatrix naturae,* sanitation, hygeine and to have brought into use a number of remedies still thought useful in therapeutics.

DISTRIBUTION OF PHYSICIANS

In the recent preliminary report of the Commission on Medical Education (1927) we read that "the population per physician has increased considerably in the smaller communities and that there has been a smaller increase for the entire country" during the years 1906 to 1923. In towns of 1000 to 2500 this increase of population per physician has been 54% and in cities of 50,000 to 100,000 the increase has been 5%, while in cities of over 100,000 the increase has been 9%. Taking the United States as a whole and excluding New England, the increase has been 13%. These figures do not tell the whole story because in cities contract practice abounds and the number of practitioners is augmented by including recent graduates who are serving as internes and institutional men such as those holding faculty positions but not practicing. Furthermore, some of the practice of rural districts is done by city physicians.

The statement is made that the outstanding cause for "the ever increasing scarcity of doctors in rural districts lies in the greater opportunity in the cities for the earning of financial and other rewards. It is noted that some features of medical training, especially the inevitable emphasis in the hospitals and during the internships on the major and more serious illnesses and the dependence on specialists, well-organized hospitals, nursing, laboratory and consultant services, tend to make a recent graduate hesitate to assume the responsibility of individual practice in a small community".

Pusey is quoted as estimating that the average age of rural practitioners is 52 years and that no recent graduate has gone into 35% of vacated districts in the past ten years. It was from these data that Pusey predicted an utter breakdown of rural practice in another ten years. The conclusion is inevitable that the tendency of recent graduates is to locate in larger centers in preference to rural communities.

The reasons advanced for uneven distribution of the profession may be enumerated as follows:

1. Elevation of standards of medical education.
2. Increased cost of education.
3. Reduction in number of medical schools.
4. Reduction in size of student body.
5. Great cost of obtaining a medical education both in time and money and effort.
6. Lack of what is deemed to be necessary facilities for the practice of medicine in rural districts, such as hospitals and laboratories.
7. Competition with city physicians due to good roads, automobiles and telephones.

It is contended that much that is now required in the pre-medical and medical curricula is unimportant detail which could be dispensed with and thereby much saving in time, money and effort could be accomplished. By so doing many contend that a larger number of graduates would locate in rural communities.

—Palmer Findley.

THE NEBRASKA TUBERCULOSIS ASSOCIATION MEETING

The Chamber of Commerce of Omaha on April 8th honored Dr. Philip P. Jacobs, the publicity director of the National Tuberculosis Association, with a Public Affairs Luncheon. This occasion was taken also as an opportunity for the annual meeting of the Nebraska Tuberculosis Association.

The luncheon was presided over by Dr. Wm. N. Anderson, vice-president of the state association, in the absence, owing to illnses, of Dr. S. R. Towne, the president.

Dr. Jacob's address was one of extreme interest to the large audience which consisted mostly of individuals interested in public health activities. The subject of his talk was "The Money Value of Human Life". He detailed briefly and most forcibly the value of human life to the parents and to the community, roughly estimating the value of a baby, a child at ten years, and at various stages in life. He then compared this to possibly the dairy problem, in which a calf would be carefully raised until it was a producing member of the herd, and what a loss it was to the farmer when disease overtook it. This was easy to understand, and yet so difficult for most of us to apply to a human life.

He followed this further in a detailed account of the expense of the establishment of a tuberculosis sanitarium in any community. It was easy to see that seven or eight hundred thousand dollars spent in a county like Douglas was a means of saving several millions of dollars when it meant the taking of adults in their prime—and this is the time when tuberculosis overtakes individuals—and return them to the community in six months or a year instead of having them leave the community permanently, or have the community lose their personal services, as well as have to bear the expense of treatment and maintenance, because every sick individual is an economic loss to the community. It makes no difference whether his own means, or those of his family are able to maintain him, for the finances used to take care of him are diverted from other paths of production, and the individual is forced to live by the efforts of others, rather than being able to earn his own living.

Following the address the Nebraska Tuberculosis Association held its annual meeting in an adjoining room. The present officers were reelected for the year: Dr. S. R. Towne, Omaha, president; Dr. Wm. N. Anderson, Omaha, vice president; Mr. Thomas C. Woods, Lincoln, vice president; Dr. A. D. Cloyd, Omaha, secretary;

Mr. C. J. Claassen, Omaha, treasurer; Dr. John F. Allen, Mrs. H. C. Sumney, Dr. F. W. Heagey, Mrs. F. W. Carmichael, executive committee. The present directors, twenty-one in number, were re-elected, and three new directors added: Mrs. F. W. Carmichael, Omaha, 1 year; Miss Anna Krants, North Platte, 2 years; and Mrs. Cullen N. Wright, Scottsbluff, 3 years.

The following resolutions were passed:

"Due to the illness of our beloved President, Dr. Solon R. Towne, and his enforced absence, probably for the first time, from the annual meeting of the Nebraska State Tuberculosis Association, we take this opportunity to express our heartfelt sympathy, and give our appreciation of the years of devoted and profitable service that Dr. Towne has given to the Nebraska State Tuberculosis Association.

"BE IT RESOLVED that a copy of these resolutions be placed in proper form and forwarded to Dr. Towne, with the official sanction of the Executive Committee of the Nebraska State Tubreculosis Association."

"BE IT RESOLVED that it is the duty and the privilege of the Nebraska State Tuberculosis Association to take this opportunity to express its appreciation to Dr. Philip P. Jacobs for the favor that he has shown the association, and the sacrifices that he has made to come to Omaha at this time, and address the community on subjects that are so vital to the health and the progress of the City and of the State."

The association is very fortunate this year in being granted a place on the program of the Nebraska State Medical Association's meeting at Lincoln in May. On Wednesday, May 11th, Dr. Ralph Matson, of Portland, Oregon, addressed the Medical Association on "Operative Collapse Therapy in the Treatment of Pulmonary Tuberculosis." Dr. Matson and his brother are probably the two most widely known men on artificial methods of treatment of pulmonary tuberculosis in the United States, and we feel that the State Medical Association, as well as the people of Nebraska, are to be congratulated on the fact that we have an opportunity to hear a man of such authority on this subject.

The financial report of the year's work of the Nebraska Tuberculosis Association was not quite so favorable as for the previous year. Of course, the only means of finance that the Association has is through the sale of the tuberculosis seal at Christmas time. It is remarkable what is accomplished by the $22,300 that were raised purely by the sale of the penny seal. Through this fund tuberculosis nurses are maintained in the dispensaries in Lincoln and Omaha, literature is distributed to the entire state, health crusades have been carried into the minds and hearts of 50,000 or 60,000 school children, speakers have been brought to the state, surveys of the situation from the standpoint of tuberculosis made, exhibits held at State Medical Meetings, and delegates sent to the meetings of the National Tuberculosis Association.

THE WOMAN'S AUXILIARY MEETING

The Woman's Auxiliary, Nebraska State Medical Association met in Lincoln at the time of the Nebraska State Medical Association's annual meeting, under the presidency of Mrs. Clarence Rubendall.

Mrs. Frank Gengenbach, Denver, President of Woman's Auxiliary of the American Medical Association, was the guest of honor.

Reports were given by officers and presidents of County Auxiliaries. Mrs. Frank Conlin gave report of activities of Texas Auxiliaries.

Emphasis the past year was placed on physical examination on birthday and on placing Hygeia in every library, school and office in Nebraska. One hundred dollars was contributed towards furnishing children's sun parlor in new annex of University Hospital, Omaha.

Mrs. Walker, Lincoln, was elected president. The social entertainments were unusually fine.

EDITORIAL PARAGRAPHS

Physicians should take pains to inform those of their regular clientele. who are contemplating motor trips during the summer, of the benefits to be derived from typhoid-paratyphoid inoculations.

One hundred and eight hours of artificial respiration, as in the Albert Frick case at Evanston, Ill., is quite a record of sustained effort by fellow employees and physician to save life and again demonstrated real human interest and man's humanity to man.

A Hospital Clinical Congress of North America is to be staged at Milwaukee, June 20-24, with the Reverend C. B. Moulinier of Milwaukee and Dr. D. T. MacEachron of the American College of Surgeons as the directing genii. Tentative program at hand indicates a meeting of considerable importance.

It is stated (Volwiler) that there are about fifty infective diseases that are important. The causative agents of 12 of these have not yet been discovered. Of the remaining 38, a partially successful curative agent is available in 11, leaving 27 diseases in which the causative agent is known, but for which no specific treatment is available.

After all, the Code of Ethics is nothing more than the Golden Rule; if you live up to the Golden Rule your ethics are not far afield.

The picture known as "The Doctor", to be seen in many physicians' offices was painted by Sir Luke Fildes who died recently in London, aged 85. The original of the picture was painted 34 years ago and hangs in the National Gallery, London.

Whether, as a profession, we like it, or not, cesarean section is becoming more popular with surgeon and laity. The editor is reminded of the young mother who told him that if she were to have any more babies she wanted them to grow on trees, like little apples. Let us not forget the apparently well authenticated case of the patient in the ward, who delivered herself, while awaiting her turn to have a cesarean section.

The nursing problem will never be settled until it is settled right. Why not—like teachers—have nurses with first grade and second grade certificates? Medical men who have the ear of the populace must push the propaganda for reform in the nursing service and give us the trained practical nurse. Something will have to be done to place at the bedside of the people of modest circumstances, persons who are competent to take care of them.

Dr. Herbert H. Davis, Omaha, now in Vienna, in a personal communication to the editor, dwells on the excellency of the work in pathology and diagnosis and goes on to say "The fluoroscopy of the heart and lungs is marvelous. Each chamber of the heart is watched separately as to action, shape and position. By special position of the patient the interlobar fissures are brought out and interlobar empyema, which is often passed unnoticed, is wonderfully demonstrated by this method."

The publication board of *The Nebraska State Medical Journal* early adopted a policy of mentioning as "Books Received" but of not reviewing books, from publishing houses that do not advertise in this Journal. It is interesting, therefore, to note that the board of trustees of the Medical Society of the State of Pennsylvania has recently adopted the same policy. The board of the latter society figured that they had been giving to this quasi-advertising purpose, space that was worth from $800 to $1,000 a year.

Recently two physician of this state, both over seventy years, passed away after many years of service to their communities. In commenting on the passing of the physicians, the lay press in each case commented on the supposed fact that the late lamented had never sent a bill to a patient for service rendered, as if this were one of the cardinal virtues. On the contrary the neglect to send statements for service rendered to those who can pay is a vice, an injustice to the physician's family, to the patient and to the physician himself.

In an editorial, *J. M. A. Georgia*. Harbin, "Mortality of Acute Appendicitis", states that the general death rate is increasing; that the mortality from appendicitis among physicians is greater than that of the average adult population; that 60% of abdominal operations concern the appendix; that the annual incidence of appendectomy is about one in three hundred of the population; that some of the lowest mortality rates may be found in the less populated districts and smaller hospitals and that early diagnosis and not surgical skill should be awarded the credit for a low mortality rate.

"Brok Loss": The patient reports on the later stages of convalescence after a suprapubic prostatectomy:

> "Doctor
>
> the Water brok loss at the Wand the first night
>
> the Urine is runing out of the Want and some time I can mak it natural way I past about one Quart of urine last night"

The lay press has featured under bold headlines two facts brought out in a report of a survey made by Miss Anna Cameron (Nebr. Uni. Extension Dept.) of conditions in about sixty counties in Nebraska: That there are six counties without railroads, and two counties without a doctor. On the face of this statement it looks bad. Pennsylvania, with an area about two-thirds that of Nebraska and with a population about six times as large, has one county without a railroad; but it has highways and motor cars—so do Nebraska counties without railroads. A town, without a physician, twenty-five miles from a railroad in these days of highways and automobiles, is no worse off than were the farmers ten miles from any Nebraska town before the days of the auto. It seems certain that it is not a scarcity of physicians, but lack of support, that keeps physicians away from these small isolated places.

A RECENT VISIT TO THE MAYO CLINIC

Items of Interest and Comment (Concluded).

CLARENCE EMERSON, M. D., F. A. C. S.,
Lincoln, Nebraska.

Dr. Masson performs a very neat hysterectomy. In the first place exposure is adequate by a mid-line incision from pubis to one or two inches above the umbilicus, depending on the length of the sub-umbilical region. With the patient in extreme Trendelenburg and well relaxed under anesthesia, the intestines gravitate readily out of the pelvis leaving free access to the uterus. The round ligaments are clamped and dissected free from the uterus. The bladder is separated from the uterus by a bold stroke of the knife and wiping down with gauze. A hook retractor is inserted into the corpus and forms traction forward and upward, exposed the posterior surface and the cul-de-sac. An incision through the reflected peritoneum is made at this point. The upper portion of the broad ligament is then clamped and incised mesial or lateral to the ovary, according to the desire to preserve the latter. The ligatures are then placed on the incised broad ligaments and round ligaments in order to eliminate unnecessary forceps from the field. The uterus is held by an anterior and a posterior hook tenaculum and clamps applied to the lower broad ligament segment including the uterine arteries. He stresses the point that the clamp should be directed obliquely with the points against the cervix in subtotal and against the vagina in total hysterectomy. By successive attacks close up against the uterus first to one side, then the other, and to the anterior and posterior surfaces by scissor dissection, the uterus is freed from its attachments. As soon as the vagina is opened on one side it is swabbed with iodine and packed with iodoform gauze. A suture ligature through the vagina and including the lower segment of the broad ligament with the uterine artery is firmly tied on either side. The vagina is closed by running suture. The round ligaments are sutured to the vaginal stump and all raw surfaces covered with peritoneum. Very careful hemostasis is effected. In fact it is evident that extraordinary precautions are practiced by all of the surgeons in the Mayo Clinic to obtain absolutely dry operative fields before closure. Dr. Masson states that total hysterectomy, if properly done, carries no greater danger than sub-total. Total hysterectomy, he recommends as a routine because of the possibility of malignancy. A very low degenerating submucous fibroid was found in the case just operated, which would have complicated matters if subtotal operation had been due. Radium should never be used for submucous fibroids. If used above the cervix it should only be in cases where the fibroid is interstitial and the uterus freely movable.

The actual cautery was used in a case of cervical erosion. He stated that results of this treatment were very good. The cervix contracted, the vaginal mucosa grew in instead of cervical mucosa pouting out.

Dr. Adson did a facial to spinal accessory anastomosis. The dissection was clean, layer by layer and as Adson remarked, it opens up the field of operation like turning back the leaves of a book. The performance of this operation requires a detailed knowledge of anatomy. The nerves are small — about the diameter of an ordinary sewing needle, and could easily be missed or damaged by unintelligent approach. The incision was along the anterior border of the sternocleido-mastoid, uncovering the inside clear to the mastoid process. This muscle was then turned outward and the submaxillary gland rolled inward exposing the entire length of the posterior belly of the digastric. The spinal accessory was found coursing downward and outward from the middle of the posterior belly of the digastric. It was proved by slight irritation of the nerve which caused twitching of the pectoralis. This nerve was thoroughly isolated but not cut at this stage. The facial was next isolated where it forms a loop near the styloid process. It is more difficult to find than the spinal-accessory. After its exit from the skull it courses downward then curves upward and forward into the parotid gland. It sends a twig to the digastric. After both nerves are isolated they are cut at proper distances to unite without tension. A very fine needle and silk thread (both obtained from Japan — finer than anything made here) was used to suture the nerves together. The sutures passed through the neurilemma, avoiding as much as possible the nerve itself.

Dr. Adson said the results of these operations were very satisfactory. At first the face twitches on shoulder movements, but control is soon acquired.

Dr. Adson did a ventricular puncture for ventriculograms. He very kindly permitted me to take a cinema picture of it step by step. The case was one manifesting choked disc and secondary atrophy due to probable tumor. A decompression had been done elsewhere a year previously with temporary marked improvement of vision but with recurrence. His effort to obtain cerebral fluid by puncture at the site of the decompression, failed. Puncture on the opposite side through a small trephine opening was successful. The fluid was under pressure. Injection of air induced pain and frontal headache. Adson said that injecting a normal ventricle did not cause pain. His failure to obtain fluid on the right side, the obtaining of fluid under pressure on the left, the induction of pain and headache and of pain and stiffness in the neck, he interpreted as clinical evidence of tumor on the right side of the brain. Pictures were taken in the four positions. However, he thought considerable air escaped along the path of the cannula as he withdrew it, and he feared that the pictures would not be satisfactory.

At Dr. Adson's request, Dr. Will Mayo very graciously permitted me to take a movie scene of him at work. He was operating on a very interesting case of diverticulum of the common duct, but my position in the amphitheatre did not permit of good view of the operation. Dr. Mayo, in this case, separated the duodenum from the stomach to interrupt a vicious circle due to a previous gastroenterostomy performed elsewhere. Further exploration revealed the diverticulum which he dissected out. The method used to separate duodenum and stomach, a method used also by other workers in the clinic when a gut was to be bisected and closed at its end, was new to me and very serviceable. The viscus was bisected between two clamps. A quilting running stitch was sewed just at the side of the clamp opposite to the cut. This closed the bowel and eliminated the stretching out that occurs if suture is applied without the clamp. The cut end is then whipped over to approximate serous surfaces.

In discussing operations for malignancy, Dr. Wm. Mayo said, "I don't continue an operation if the risk required is greater than any possible result to be gained. It is all right to want to complete operations and carry to completion the technical procedure, but if the possible result doesn't warrant the risk, I won't do it. I want to do for the patient exactly what I would want done for myself." In the case under discussion an exposure was made to complete a two-stage excision of the rectum. Carcinoma involvement of pelvic lymphatics was found and he discontinued the effort at complete removal.

Dr. Pemberton did eleven thyroidectomies one afternoon. One was a rapidly growing tumor in a man of fifty-eight who had a short time previously had an ulcer of the jaw treated by radium. X-ray had been applied to the goiter elsewhere two months prior to visiting the clinic. The diagnosis preoperatively was malignancy or abscess or hemorrhage. He had seldom if ever seen abscess of the thyroid except when associated with malignancy. An incision over the gland released a pint of thick, yellow pus. Finger exploration revealed degeneration and sacculation of the left lobe. Dr. Pemberton thought it was probably not malignant but an abscess secondary to the ulcer of the jaw.

Dr. Pemberton believes that adenomata should be operated because of the insidious development of cardiac and kidney lesions. He thinks temperament and the stress of the "American drive" type of existence is the cause of exophthalmic goiter and that deficiency of iodine is probably the cause of endemic goiter. In this country we have endemic goiter districts and in these districts exophthalmic goiter is also prevalent, while in Switzerland, in India and Europe generally the endemic goiter is common but exophthalmic goiter very rare. He thinks the difference lies in the stolidity of the European as compared with the American.

I inquired as to the use of the electrocardiogram in goiter and learned that it is used almost routinely at the Mayo Clinic. Dr. Pemberton stated that in adenomas, particularly where cardiac derangements so frequently resulted, the electrocardiograph was very valuable. He mentioned the inverted T-wave is a frequent finding. It has diagnostic value both as to the actual state of the heart and also with reference to the diagnosis of toxicity in the adenomas associated with hypertrophy. They feel that digitalis is harmful in goiter for some reason not definitely understood. Digitalis will produce a T-wave. Their results are much better since abandoning the routine use of digitalis. Only in cases presenting considerabl edema of the feet and legs with definite cardiac decompenatiosn is it used. The routine preoperative treatment is rest and Lugol's solution gr. x, t. i. d. with repeated metabolic readings. Administration of Lugol's produces a characteristic "burnt-out" appearance in the epithelium. The epithelium takes on a frayed or feathery appearance in places resembling the trees in a forest fire.

Dr. Charlie Mayo amputated the breast in two cases. One was radical for moderately early malignancy. The other had involved the muscle and did not show lung involvement. The axillary glands were very large and the arm swollen. He felt that to attempt radical removel would only increase the swelling of the arm and that the case was hopeless anyway. The wound was left open, covered with gauze for x-ray therapy after one week for development of granulations. He stated that x-ray applied immediately would give rise to infection and death. The x-ray lowers resistance to infection when applied to a fresh wound. The pathologist grades the malignancy as one, two, three and four. The gradation is based on the per cent of cells in the representative section that shows differentiation approximating normal adult tissue. If twenty-five per cent shows adult differentiation it is relatively benign and metastasis will be slow, cures are more common and the duration of life longer. Pearl formation in epitheliomata, glandular acini formation in adenocarcinoma and the secretion of colloid or the normal secretion of that particular tissue are factors indicative of approximation to normal adult tissue and are relatively benign. These are graded one. If fifty per cent shows the above described differentiation it is classed as grade two; seventy-five per cent, grade three; and one hundred per cent, grade four. The character of the cell, however, with respect to the degree of deviation from an adult type toward the embryonic, enters into the estimate of its malignancy. (Unless definite specific and measurable characters form the basis of an estimate, I would consider it of little value. I have little faith in any estimation on any subject when the estimator cannot state clearly why he has his opinion. His observation may be more accurate than that of an inexperienced observer in that field, but he should be able to describe what observations led him to a conclusion. Therefore, when I am told that Bloodgood, MacCarty or anyone else can do this or that but cannot state how they do it, I am skeptical. I was, therefore, gratified to learn that the factors that MacCarty relies on for gradation of malignancy have definite, measurable characteristics, even though perhaps more complicated than I have stated them.) The ratio of nuclear matter to cytoplasm has been studied in an effort to make it a diagnostic factor of a malignant cell. In conversation with one of the doctors who has done a great deal of the work, I was told that considerable value seemed to rest on it, but that further study was necessary to finally establish the fact. He related a great lack of uniformity in the histologic diagnosis of several eminent pathologists in a test and stressed the difficulty encountered in differentiating granulation tissue which is embryonic type from malignant cells. The combination of clinical picture, gross appearance and histology usually furnished evidence as to malignancy and the probable degree of malignancy, but histologic section alone is often unreliable.

Dr. Chas. Mayo stressed the importance of educating the profession before attempting to educate the laity on cancer. Frequently the history of breast tumor relates repeated visits to the family physician who advised waiting until axillary glands are felt. Or in another case the same physician will rebuke the patient for not coming sooner when she has waited until axillary glands are palpable. The profession should be awake to the necessity of biopsy in every case of breast tumor.

ANTE MORTEM

To die of a refined disease
Is a desire I cherish.
Others may die of what they please,
But, Doctor, when I perish
And hear the heavenly harpists play:
"Nearah, my God, Oh, nearah",
Promise me that my chart will say:
"Polycythemia Vera."

A carcinoma's seldom fun;
It's coarse to die of rabies;
It's not, and never has been done,
To die of itch or scabies.
The Potter's field is overrun
With men who died of tabes.

I'd hate to waste my dying breath
On tape-worms or anemia.
Only a rabbit-fancier's death
Is septic tularemia.
Glanders would seem to mean that I
Lived close to horse or brute.
Gleet or paresis would imply
Loose friends of ill repute.

Polycythemia lays its hand
On but a chosen few.
Painless but fatal to that band,
Red-blooded men and true.
Polycythemia has a sound
Ear-filling, soul-compelling.
So when they plant me in the ground
And when the organ's swelling
Oh, Doctor, when my folks all sing:
"Nearah, my God, Oh, nearah",
This classic diagnosis bring:
"Polycythemia Vera."

—Sanford Gifford.

THE SOCIETIES

At the quarterly meeting of the **Buffalo County Medical Society** held in Kearney, April 28, the following program was given:

The Surgery of Peptic Ulcer.......................Dr. R. T. Jones, Kearney, Nebr.
Unrecognized Otitis Media in Children.......................Dr. Henry Farrell, Kearney
Discussion and Treatment....Dr. C. H. Fox, Kearney
How Shall We Limit Feeblemindedness?....................Dr. J. A. Burford, Kearney State Hospital
Diagnosis of Chest Conditions...Dr. John F. Allen, Omaha

The program followed a dinner given by the society at the Wiseman Party House at 6:00 p. m.

The program given was one of the best that this society has ever had and while all of the papers were good, the members especially appreciated the forceful talk given by Dr. John Allen. Although appearing last on the program Dr. Allen kept his listeners interested throughout the remainder of the session.

Twenty-two members were present.

HUMAN INTEREST TALES

The village of Barada is reported without a physician.

Dr. W. H. Nelson, Ruskin, has been ill for some time.

Dr. Fred. W. Kuhlman, formerly of Table Rock, has located at Cook.

Dr. F. H. Shambaugh, formerly of Omaha, has located at Bridgeport.

Dr. and Mrs. A. L. Miller, Kimball. have gone to Europe with a clinical tour.

Dr. and Mrs. W. H. Taylor, Omaha, have gone on a several months' trip to Europe.

Dr. and Mrs. H. B. Lemere, Omaha, returned the first of May from a trip to California.

Dr. J. J. Kieffer, West Point, has returned from an auto tour of several months to southern California.

Dr. G. Alexander Young, Omaha, recently spoke on "Mental Hygeine" before the Omaha Woman's club.

Dr. J. B. Babcock, physician at Hastings State hospital, was seriously injured in an auto accident recently.

Dr. and Mrs. John C. Thomson, Lincoln, who have been abroad since last fall are expected home about June first.

The case of Brehm vs. Neumarker (Dr. W. R., Columbus) in the District Court of Platte County, was decided in favor of the defense.

Dr. R. E. Roche, Sidney, has returned home and resumed practice after a serious operation which confined him for several months.

Dr. D. D. Sanderson, Lincoln, spent several weeks at Excelsior Springs enjoying the Missouri sunshine (?) during the recent rainy period.

Dr. Claude Wills, practitioner at Madison for several years, has gone to Parco, Wyoming, to take charge of the Producer's and Refiners hospital.

Dr. Paul Chandler, for the past year in practice in Omaha, has gone to Boston to become associated with Dr. George Derby, ophthalmologist of Harvard university.

Dr. Gladys Henry Dick, Chicago, was speaker at the Pi Beta Phi banquet, Lincoln, the last of April. The staff of the Lincoln General hospital also entertained at dinner in honor of Doctor Dick. It may not be generally known that as Gladys Henry, Doctor Dick was a Pawnee City girl.

NECROLOGY

William Leonard Welsh, Fairbury, Nebr.; Kansas Medical College, 1893; member Nebraska State Medical Association; in service in the medical corps during the World war; practitioner at Fairbury since 1919; died shortly after suffering a cerebral hemorrhage, April 20, aged fifty-five years.

E. Engelhardt, Oconomowoc, Wis.; an early day physician of wide practice at Rising City, died at Oconomowoc, Wis., April 10, aged about eighty years.

BOOKS RECEIVED

The Conquest of Disease, by Thurman B. Rice, A. M., M. D. Cloth, 363 pages with illustrations, 8 mo. Price $4.50. The Macmillian Company, New York, 1927.

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FACTS AND FANCIES

By Allan D. May

I read every day in the paper the world's throbbing story of woe,
Of battle and murder and arson, till the tears of my pity o'erflow.
The clerk that the banker had trusted absconds with a bundle of kale
And spends lots of leisure repenting in the damp, chilly cells of the jail.
I read how the vows have been broken that once were so solemnly made
And a suit for divorce has been entered and decress has been granted as prayed;
But there's always one thing in the paper that never is solemn nor sad,
And I find a relief for my sorrow in reading a medicine ad.

It tells of the man who has suffered the torture of miserable ills
And the doctor coud never relieve him with tonics or tinctures or pills;
They had gathered in grim consultation and solemnly doomed him to die,
And he made all his plans for departure to the land of the sweet bye and bye.
But, advised by a friend, he had purchased a bottle of marvelous dope—
Six bottles had cured him like magic and filled him with ginger and hope.
In gratitude deep he rehearses the narrow escape that he had,
And his is a tale of rejoicing as told in a medicine ad.

When depressed by the evident evil—the tragical phases of life,
When sick of the weeping and wailing and clamor and roar of the strife;
The croaking of prophets of evil—the record of graft and of wrong,
Where Corruption holds sway as a tyrant and the weak are the slaves of the strong;
When hope, it would seem, is abandoned and the skies are so dismal and gray,
When I feel there is nothing to warrant a heart being happy and gay;
I turn from the news that is grewsome with heart that is troubled and sad,
And seek some relief for my feelings by reading a medicine ad.

The intestinal tract is now getting the blame in progressive medical circles for a good many things that used to be ascribed to the teeth or the tonsils, but we have decided, come what may, not to have ours removed, such as it is.—*Ohio State Journal.*

"DOCTOR'S HEART"

The number of physicians meeting cardiovascular deaths has prompted Albert S. Hyman, New York (*Journal A. M. A.*, March 5, 1927), to review the clinical records of 100 physicians whom he has examined because of so-called heart symptoms. The complaints which brought the physicians for a cardiovascular examination were: Irregularity of the pulse, twenty-nine; "heart consciousness," twenty-four; precordial pain, ten; retrosternal discomfort, nine; dyspnea and "heart pain," six, and dyspnea alone, three; subjective complaints were not found in nineteen. The greatest number (twenty-nine) complained of irregularities of the pulse; in a "control" group of 100 patients taken from a cardiac clinic, the greatest number (sixty-one) complained of pain referred to the heart region, and only two patients complained of an irregular pulse. The causes for the irregularities found in the pulse of the twenty-nine physicians were: Extrasystoles, twenty-three; auricular fibrillation, two; partial heart block, one, and paroxysmal auricular flutter, one; irregularity was not found in two. The causes for heart consciousness in the twenty-four physicians were: Extrasystoles, thirteen; tachycardia, four; bradycardia, three, and auricular fibrillation, one; in three the cause was not found. The causes of precordial pain in the ten physicians were: Hypertrophy of both heart and aorta, three; chronic endocarditis, three; hypertrophy of heart alone, two; dilatation of aorta alone, one; the cause was not found in one. Retrosternal discomfort and pain in nine physicians were found associated with hypertrophy of both heart and aorta in four; chronic endocarditis in one, and dilatation of aorta alone in one; in three, the cause was not found. The causes of dyspnea and "heart pain" in six physicians were: Hypertrophy of both heart and aorta, four; chronic endocarditis, one; dilatation of aorta alone, one. The cause of dyspnea alone in three physicians was hypertrophy of both heart and aorta. The reasons that brought nineteen physicians for cardiovascular examination when they did not have subjective complaints were: Rejected for life insurance, six; examination preparatory to long journey, six; examination preparatory to engaging in athletics and more active exercise, four; general examination suggested by periodic health examination propaganda, three. Of the six rejected for life insurance, four had high blood pressure, one had aortic insufficiency, and one had "anginal symptoms" with T-wave inversions in the electrocardiographic tracings. Of the remaining thirteen who appeared for examination for the reasons stated, four had hypertension, two had chronic valvular disease, and one had an aortitis. A study of the blood pressure of these 100 physicians in age groups failed to elicit anything noteworthy. Hyman concludes that while it is true that cardiovascular disease is the greatest cause of death among physicians, the belief that there is a clinical entity known as the "doctor's heart" is without foundation.

CONTRIBUTION TO HELMINTHIC THERAPY

As Trichocephalus dispar and Oxyuris vermicularis tend to localize in the appendix and cecum, oral treatment often fails to reach them. Carbon tetrachloride is not efficacious against Trichocephalus or Oxyuris, although it is fairly useful against the strongyloides family. M. Fernan-Nunez, Nashville, Tenn. (*Journal A. M. A.*, March 19, 1927), asserts that "leche de higueron" by mouth is efficacious against Trichocephalus dispar. Oil of chenopodium is the most satisfactory of the common vermifuges against Trichocephalae and Oxyuris. Oil of chenopodium by mouth administered in a single dose of 40 minims, followed immediately by an ounce of castor oil, is equally efficient, less dangerous, and much more convenient for patient and physician than the more commonly used method of divided doses. Oil of chenopodium by intramuscular or intravenous injection is specific against Trichocephalus and Oxyuris, the two most difficult nematodes to eliminate. Arsphenamines given intravenously will often expel intestinal nematodes, but their field as vermifuges is very limited. Extracts of eggs of Trichocephalus injected into dogs at three-day intervals for one month apparently conferred an immunity against trichocephaline reinfestation for periods varying from seven to twelve months. While a Trichocephalus vaccine has only a limited application in man, its possibilities in veterinary practice are worthy of careful consideration. The success of a vaccine against Trichocephalus may serve as a basis for the production of vaccines against other helminths.

A German scientist says that people will soon be able to read their newspapers, then soak them in acids which will bring out the food value of the wood-pulp, and eat them for breakfast. *The Literary Digest* is already on sale at most drug stores.—*Brunswick* (*Ga.*) *Pilot*.

Chinese doctors get their professional training by being apprenticed to a practicing physician and learning his secrets.

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POST OPERATIVE PULMONARY EMBOLISM*

DONALD B. STEENBURG, M. D.,
Aurora, Nebraska.

Pulmonary embolism occurs following many different morbid conditions but the most important is its occurrence following an operation.

Some idea of its incidence may be had from the following table which, however, shows only fatal cases.

Chelsea Hospital, 9 cases out of 5406.

St. Mark's Hospital, 6 cases out of 7327.

St. George's Hospital, 12 cases out of 11804.

St. Bartholomew's Hospital, 8 cases out of 17153.

Mayo Clinic, 47 cases out of 63573.

Swiss Hospitals, 392 out of 75955.

About one case in ten is fatal as nearly as the statistics can be gotten at.

Sex seems to play no part whatsoever in its incidence. There are a few cases on record showing heredity as an exceedingly important factor. Dr. B. R. McGrath reported such a case to me recently.

Age. Statistics prove the curve of frequency of emboli remains very low for those below the age of 40, reaching its maximum incidence in the 7th decade.

Pulmonary embolism occurs with greatest frequency on the 8th day although it may occur from the first few minutes up to the 8th or 9th weeks.

SYMPTOMS

Dyspnoea is a very constant symptom and varies in degree with the extent of the lung involved, being so slight in some cases that it is merely a transient shortness of breath but when a large artery is plugged we have it in an extreme degree, with very marked cyanosis and all the symptoms of great cardiac distress. And it is the great reduction in area of pulmonary circulation rather than the reduction in breathing surface which is responsible for this symptom

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*Oration on Surgery, delivered before the annual meeting, Nebraska State Medical Association, Lincoln, Nebr., May 11, 1927.

This fact should be recognized and instead of administering oxygen, the heart in danger of dilating should have the pressure removed from it as much as possible and this is best done by the nitrites together with morphine and atrophine.

Pain is another very constant symptom varying greatly in its intensity and being usually substernal or epigastric.

The echelon-like rise of the pulse curve, with normal temperature, Mahler's sign, expresses a striking disproportion between pulse and temperature not found in any other complication and is a very valuable sign and always should suggest thrombosis.

CASES OF RECOVERY

When pulmonary embolism occurs the dangerous period is the first few minutes and if the patients can survive the first ten minutes they survive oftener than not, provided that secondary pneumonia does not intervene and even if it does, more get well than die.

In the non-fatal cases the dyspnoea soon wears off, the pain in the chest subsides, the temperature rises and a cough soon develops. During the next few days the sputum may be streaked with blood. Chest examination reveals an area of dullness and tubular breathing. The sounds may be absent if the infarction is distant from the surface. Symptoms pass off in from a week to ten days. Embolism differs from an ordinary pneumonia in its mode of onset, its lesser severity and shorter duration.

CASES OF DEATH

A patient aged 49 at our hospital started to get out of bed 14 days after a perforated gastric ulcer had been excised and a gastroenterostomy performed, to put on his clothes preparatory to going home. He fell back in bed and died without speaking. Such cases may be due to a fragment of clot reaching the medulla although with a massive clot the strain on the heart may be sufficient to cause an immediate dilatation of the heart.

PATHOLOGY

The primary condition is the formation of an intravascular clot. The situation of this primary clot is in the internal and external iliac veins or at the point where they join to form the inferior venae cavae as shown by the few cases in which complete reports are available. Many writers have assumed that the clot originated at or near the site of operative interference but little or no proof has been discovered post mortem. When we consider that more than half of the cases are comprised by gall-bladder, stomach and appendix cases all of which have their veins draining into the portal system yet the embolus which caused death passed into the right auricle and plugged the pulmonary artery; the thrombus, therefore, was not formed in the operative area but almost certainly in the iliac veins or inferior venae cava.

The secondary condition is the loosening of a portion of the thrombus to form an embolus. This seems to be due to anything which causes a hastening of the flow in the veins.

Operations above the diaphragm rarely result in pulmonary embolus because venous statsis cannot occur in the superior venae cavae. Operations upon the pelvic organs more frequently result in emboiism than operations in other parts due to the large veins which may be injured by the position used in such operations, by the presence of retractors and packs in the pelvis in the proximity of veins and by the immobility of the patient after operation. It is further noted in favor of venous stasis as the chief cause of thrombosis that it occurs much more frequently in patients whose circulation is poor from toxemia, anemia or any cause.

There is a very prevalent belief that embolism is due to sepsis, but this seems an untenable theory.

Kronig and Voit observed that intensified asepsis did not diminish the number of thrombosis and embolisms.

Beckman in his review of 6825 operations came to the conclusion that sepsis cannot be the cause of thrombosis.

This is confirmed by figures from the Chelsea hospital where only one case out of nine was definitely septic.

Some surgeons claim there is a mild form of sepsis in all operations unaccompanied by breaking down of the wound. If this type of sepsis then be a cause of embolism we should have the second focus becoming septic with a resulting pyemia. This, however, is not the case. True, a secondary pneumonia often develops, but this is rarely a septic pneumonia but a pneumonia caused by an ordinary pneumococcus which has been able to gain entrance to damaged lung tissue.

Sepsis may be a contributing factor, by lowering resistance, by slowing the vascular stream due to increased pain in the septic wound and by blood changes the nature of which we know little.

Hunter proved 100 years ago that stasis alone does not cause thrombosis in intact veins by his "living test tube" experiment, i. e., a vein ligatured at both ends in a living animal.

Physiologists have shown that thrombokinase must be in contact with the blood in order to cause clotting. This substance is not present in the blood but is found in varying quantities in other tissues in the body and a certain quantity is liberated whenever a wound is made.

Prof. Collingwood has shown that intravenous injection of thrombin even in relatively enormous amounts will not cause clotting if the blood is in a condition of movement or circulation.

It would seem, therefore, that before thrombosis can occur two factors must be present.

1. A certain amount of thrombokinase derived from the tissues and liberated by the wound must be present in the blood.

2. There must be venous stasis.

The sequence of events then would be, as a result of a wound thrombokinase is liberated from the tissues, gains entrance to the blood stream by the lymph route or directly. This enables a clot to form in those veins which for the time being blood is stagnant or nearly so.

Granting that venous stasis does favor thrombosis then the second phase is easy of comprehension. A small bit becomes loosened, passes through the right side of the heart and on into the pulmonary artery obstructing the right or left or even both.

If the embolus is small we simply have infarction of a small area (post operative pneumonia) which usually clears up nicely. If the embolus be large death may ensue with great rapidity.

Recently evidence has been submitted suggesting that: 1. There is an obvious source of fat in fat embolism other than depot fat, namely an ultramicroscopic emulsion of fat in normal blood plasma. 2. It is further suggested that physiochemical changes in the blood may coarsen the emulsion into droplets and thereby cause fat embolism. W. T. Porter has observed fat embolism in patients dead of shock and believes such state a result of fat embolism.

TREATMENT

The only radical means would be to suppress the process of thrombosis which would prevent the action of thrombocytes in hemostasis and coalescence of tissues. The ideal method would arrest the process temporarily as soon as it had functioned for hemostasis and the union of surfaces but the exact moment of this would be difficult to determine.

Operative treatment as suggested by Trendelenburg is rarely possible of execution. From a prophylactic standpoint preliminary purgation should be entirely abolished and starving before and after operation discontinued. During the operative period cramped postures should be avoided as much as possible and pressure on veins should be avoided. Mattresses on operating tables should be comfortable.

After operation the venous circulation should be hurried especially by means of breathing exercises at least twenty minutes several times daily. Active and passive bed gymnastics have seemed to be of value in Germany.

Useless destruction of tissue, especially that which lies near veins, and any disturbance of blood vessels should be avoided.

The heart, kidney and intestinal conditions should be carefully scrutinized and necessary measures instituted.

Anemias, toxemias and other debilitated states should receive careful attention.

Although this subject is a difficult one, the causative factors far from definitely proven, the means for preventing embolism so uncertain and the treatment so unsatisfactory it is a great thing that surgeons have at last begun to enquire how they may avoid this dreadful complication and it is to be hoped that in the near future we shall be able to solve this problem completely.

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DENTAL INFECTIONS—THE PHYSICIAN, THE DENTIST, AND THE ROENTGENOGRAM

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Lincoln, Nebraska.

Until late in the 17th Century dentistry was practiced by physicians. Since then it has been practiced as a separate profession by men who have not had a thorough medical training. Until the present century dental students have had some training in medical subjects but they have not approached their profession with a well grounded background in medicine. Because of his training, the dentist has confined himself too much to mechanical procedures and has taken too little interest in the general health. On the other hand, physicians have attached too little attention to the teeth.

The theory of focal infections and the establishment of the importance of the relationship of systemic disease to the teeth and other organs have brought both professions together seeking to find mutual grounds for cooperation. The tendency now in the dental profession is to make it a medical specialty.

Dental caries is the most prevalent disease of civilized man. It was an entity in prehistoric life, for indubitable evidence of caries and pyorrhoea are found in the fossil remains of our western Nebraska fossil beds. I have recently seen the same oral conditions in the roentgenograms of mummies who lived more than six thousand years ago.

The cause of preventive medicine would be greatly helped by physicians if they would place greater emphasis on deciduous teeth and stress the importance of early attention to the first signs of caries. It is known that 90 per cent of the infective lesions of the teeth at the most are due to infections entering the pulp. People must be aroused to the knowledge that these cavities may cause serious trouble in after life. The trouble enters the root canal today. Many years later it may destroy life. It is not hard to compute that there are millions today needing dental care. Too often the physician overlooks the teeth in making a routine examination. The physician should cultivate in the public mind the importance of the teeth in preserving the health. The physician must take the blame along with the dentist in the present state of the public attitude toward preventive medicine.

Dr. Hugh W. MacMillan, of Cincinnati, says, "Since the discovery of the roentgen ray, dental diagnosis has advanced almost exclusively in the field of roentgen-ray technic. The old methods of diagnosis, namely, inspection, palpation, percussion, response to thermal changes, and the interpretation of the various subjective symptoms of pain have to a great extent become a lost art. The convenience of the roentgen ray, its time-saving qualities, its Ford-like production and cost, its popularity among the laity, and its unerring diagnosis in long-standing chronic bone conditions make for it a very definite place as a part, but only a part, in the scheme of dental diagnosis."

Until the advent of roentgen rays the fields of dentistry and medicine were clearly defined and neither the dentist nor the physician were more than casually interested in one another's field. With the development of roentgen diagnosis and the growth of knowledge concerning oral foci of infection and their influence on systemic disease, it was found that the relations between the physicians and dentists must be put on a new and more satisfactory basis. As the physician became acquainted with the great importance of oral infection the teeth assumed a new importance and their examination, diagnosis, and treatment became of great medical interest. The great question then to be decided was, "Who is to decide when oral infections are present, and who is to decide upon their treatment?"

The situation was further complicated by the fact that the decisive factor was the roentgenogram. This caused another complication to arise in the professional situation—the province or limitations of the roentgenologist, the internist, and the dentist. Debate and acrimonious verbiage early arose and though working customs are fairly well established, yet there is still some discord and jealousy.

When the roentgen ray was first introduced it showed disease around many teeth appliances. Dentistry had become largely an art and crowns, bridge work, fillings, inlays and many other types of restorative processes were found to be placed on unscientific foundations. The first principle of dentistry had been to preserve the teeth at any cost. Sir William Hunter in 1911 presented his startling and significant paper showing the seriousness of systemic infections traceable to oral infections. Then the situation changed and the emphasis of dentistry had to be placed on the riddance of all foci of infection first, and restoration second. Progress in medicine and dentistry kept pace but many dentists and physicians dragged behind. The enlightened public, are today fairly well abreast of the times and are demanding the application of the newer principles to their own condition.

The situation is clearing, but nevertheless the relations between the physician and the dentist need to be more clearly defined. In the end cordial cooperation must exist. The course of practice demands in the end the fullest cooperation between the physician, the medical roentgenologists, and the dentist.

It is the business of the medical man to pronounce the final verdict when foci of infections are found. But the diagnosis of oral infection is so largely dependent on the roentgenogram that the roentgenologist is the logical referee to determine the possibility of infection, estimating its seriousness, and indicating the treatment, the dentist consulting with him. A report to the physician in charge of a case does not contain *carte blanche* directions to the dentist as to what he should do. But it does indicate to the doctor in charge what the roentgenogram shows and he, knowing the systemic conditions of his patient, may advise the dentist as to the best procedure.

Actual dental practice is moving toward this procedure. There is more cooperation today than ever before. The decision cannot be left to any one of the triad. It must be formulated by all three.

Too much emphasis cannot be placed upon the value of routine postoperative x-ray examination in dentistry. Frequently it is not done, and broken roots and undisturbed foci of infection are left in the mouth The psychological effect on the patient who receives a routine postoperative examination is of great benefit. Patients will be more tolerant of the period of painful convalescence if they know that no root has been left and that the foci of infection have been cleared up. The roentgenogram is of more immediate value to the dental surgeon, but it becomes of great importance to the patient if any residue of infection remains. Edentulous mouths, either recent or ancient, are often found by the roentgenologists to be important sources of focal infections.

The focus of infection may be found in any part of the body and may be acute or chronic. Foci are sometimes apparent, but often only recognized after careful examination by the specialist. They may be in the nose and adjacent sinuses, the oral cavity, the throat, the alimentary canal, or the genito-urinary system.

"Bacteria and their products are absorbed through two channels, the blood and the lymph system. They are carried into the blood by passive entrance through the stomata of capillary walls, by growth of bacteria through walls of vessels, and by carriage into the blood by leucocytes. They also may reach the blood by way of the lymph vessels, after their transmission through the lymph glands. The deeper the infection is seated in the tissue, and the greater the pressure of the accumulated bacterial products, the larger is the amount of absorption. Also the tissue in which the infection occurs is of importance. Mucous membrane absorbs easily. An abscess inclosed by bone gives no chance for infiltration or extension, therefore, the pressure is great and bacterial products are absorbed readily. If there is a sinus the pressure is decreased and the amount of absorption is diminished. When abscesses or other lesions discharge their exudates into the mouth, they reach different parts of the alimentary canal where a new focus may be formed, especially if the pus is long continued. But secondary lesions may in turn also become foci for further and more general infection. Such conditions must not be mistaken for the primary cause of the focal disease but they should be removed so that they will not serve to further prolong and intensify the disease." (Billings).

"Oral foci may cause secondary infections via the capillary or lymph system. Absorption is most likely to be caused by blind, acute, or chronic abscesses, but occurs also from pyorrhea pockets, diseased gums, and other lesions of the mucous membrane. But infection may also occur by pus discharging into the oral cavity, as in pyorrhea, and suppurative gingivitis caused by poorly fitted crowns and bridges, and in alveolar abscesses with sinus; the result then is mostly a local infection such as stomatitis, pharyngitis, or an infection of the alimentary canal, as septic gastritis, enteritis, or appendicitis. But if the surface immunity of the digestive tract is overcome, the alimentry canal will become a new focus, bacteria being absorbed, causing further secondary infection.

"Oral abscesses, especially of the unsuspected chronic type, are in these days of overdentistried teeth a common infection and are of greatest importance in the diagnosis and treatment of secondary disease. The unsuspecting and deceived individual is usually not aware of the menace which has undermined his health or is ready to cause the most terrible chronic diseases if the conditions for secondary infections are right.

SECONDARY MANIFESTATIONS

"The part of the body affected and the disease produced by absorbed toxins and bacteria depend upon several factors. The different toxins have special affinities for a certain tissue. The varieties of bacteria have preferences to grow in certain tissues and even strains of a certain class of bacteria have a predilection of the place in which they are to accumulate. Some forms of a streptococci grow only in conditions with abundant oxygen supply (endocarditis), while other prefer places of decreased oxygen tension (arthritis). The part of the body in which they start a secondary infection is often predisposed by traumatic injury or lowered resistance from other reasons. Alveolar abscesses ar ealmost always primary lesions whether they are the cause of secondary disease or not, but occasionally abscess formation starts on devitalized teeth, with perfect root-canal fillings from haematogenous infection, due to diseased tonsils of some other focus." (Thoma).

The investigation of scientists gives the reader the impression that the streptococcus is the only flora found in oral abscesses which should be seriously considered. Medical writers, particularly Rosenow, whose labors have almost revolutionized medicine, confirm the belief that the streptococcus-pneumococcus group are the causative factors of secondary lesions, caused by transportation from the focus through the blood stream. Amongst the large number of bacteria to be found in oral abscesses, undoubtedly others may cause secondary disease, or produce toxins which, when taken into the circulation, may affect certain tissues and lower the health of the patient. One of the most commonly found bacteria, beside the streptococci, is the staphlococcus. It may be found alone or with others. Steinharter found it had a predilection for the alimentary tract causing duodenal ulcer, appendicitis, cholecystitis, etc. It is found elsewhere also.

The secondary complications which may arise are too numerous to mention in a paper of this size, but the classification will indicate briefly the immense field of possibilities. Septic foci

(1) Spread by contiguous permeation of tissues;
(2) Cause referred nervous irritation;
(3) Spread through the alimentary canal,
(4) Spread through the lymphatic channels, and
(5) By the haematogenous route.

Every physician in making an examination should inquire not only into the nose and throat, the mouth, and other places of possible infection, but he should make a serious study of the mouth himself or demand the evidence of a careful examination by a competent dentist and in addition a radiographic diagnosis. A superficial examination of the soft tissue of the mouth followed by a routine examination of all teeth or spaces from whence teeth have come takes but a short time and may reveal the root of all the patient's trouble.

"One cannot place too high a value on a healthy tooth in good occlusion. On the other hand, one cannot place too low a value on a devitalized tooth if it caused conditions which endanger the patient's health. The value of healthy teeth is so high that every effort should be made to preserve them. A devitalized tooth diminishes greatly in value if an abscess is formed at its root, but when it becomes a focus of ill health and disease in other parts of the body, its value becomes decidedly negative and its ownership a curse." (Thoma)

Dr. Weston A. Price, of Cleveland, writing in the Journal of American Medical Association, January 24, 1925, makes some interesting deductions concerning the local phenomena about root abscesses and their relations to the systemic defense:

"When a person has a normally high defense, as expressed by absence of recurring rheumatic group lesions, he or she tends to make the warfare against the organisms and toxic materials coming from the openings at the apexes of the involved teeth as close to the source of that infection as possible. This seems to be the principal reason why these patients have the large zones of rarefaction. This large zone of radiolucence is generally occupied in these individuals by a highly vascularized, defensive tissue, whose function appears to be chiefly that of a local quarantine station. When it is adequate and efficient, the balance of the body is protected. The production of the local warfare expresses itself as pus, which is eliminated usually through a fistula and contains exceedingly few, and often no, living organisms. It is apparently largely because these individuals can make a fight to a finish close by the source that the balance of hte body is safe from injury from these disturbances. When, however, that patient with a normally high defense has an over-load, such as influenza, pregnancy, grief, exposure or poor nutrition, he is unable to continue the maintenance of the adequate quarantine, the warfare is no longer a fight to a finish, immediately about the tooth, and the organisms and their toxic products pass into the body, and that warfare, which should have been made in special tissues close to the source of infection, must now be made in the various organs and tissues of the body. The local dental involvement now ceases to be uncomfortable because of the absence of local warfare. The accumulating toxic and bacterial material produces general changes in the blood and in the defensive forces, and the final warfare may have to be made in various organs and tissues far from the source of invasion. Since the blood stream rapidly distributes these materials to various structures, the final warfare must be made there, and that organ or tissue tends to break which has been most weakened by some of the overloads mentioned above, or by that other noncontrollable factor (so far as the individual is concerned), namely, his or her inherited susceptibility, which now proves to be a factor which related to individual organs and tissues, and which apparently is the reason why heart disease, etc., runs in families.

"In those persons with a high defensive mechanism, the long continued presence of the antigenic substances of focal infections, such as chronically infected teeth, the evidence suggests causes zones of irritation to develop as sensitization reactions, which are completely relieved by the removal of the focal infection when it is the source of the antigen, as it frequently is. There is much more than a suspicion that these factors have more than an association relation in the grouping of cancer development cases in that group with the high streptococcal defense.

"Tuberculosis tends to be associated with decalcifying processes about dental infections and in patients without a previous tendency to dental caries. The prognosis in a case of tuberculosis is suggested by the presence of a zone of condensing osteitis about a zone (previously developed) or rarefaction.

"May we not have here a new approach to the study of both the streptococcal, rheumatic, group, degenerative diseases such as tuberculosis and cancer?

"These new data furnish important suggestions, if not a preliminary basis, for diagnosis, prognosis and treatment particularly for dental focal infections, and indicate the necessity for a greatly enlarged program of research on these fundamentals.

"Calcium metabolism seems to play a most important role in both health and disease."

Dr. Charles Mayo has said that 88 per cent of all deaths, except accidents, are the result of infections of various kinds. Dr. Black, of Chicago, emphasizes particularly the high percentage of infections about the mouth constantly present. He estimated that 78 per cent of the adult population have demonstrable chronic infections about the teeth. He does not believe in extractions of all pulpless teeth. Devitalized teeth that exist for years without demonstrable roentgenographic evidence do not need removal if the age, health of patient, and secondary evidence of infection do not indicate it. Dr. Edward Hatton, of Northwestern University Dental College, has shown that a percentage of those areas around apexes of teeth in which there is a demonstrable lesion may heal following treatment and filling of canals. Periapical cavities into which the apex extends, sometimes heal. Only in a few healthy individuals in which there is definite evidence of arrest of all signs of infection at the apex is it safe to leave a tooth that is devitalized. Negative evidence must be carefully considered and there must be a period of frequent observation. Even then it is always a potential danger for re-excitement of infection or blood borne infection may cause an acute exacerbation.

Dr. Rosenow has found the same organisms in infected areas about teeth and in secondary lesions of the body, and from both locations cultures have been obtained reproducing the same secondary lesions elsewhere. Many consider this proof positive that the area around the apex of the tooth is the cause of the secondary lesion, which is not necessarily so, for both may be the result of a focus elsewhere. Injection of animals from these infected areas about the apexes of roots of teeth, when there was no secondary lesion in the individual, have not as a rule produced secondary lesions of consequence in the animals. This suggests that infected areas about the apex of the tooth have not been as great offenders as we have been led to suppose. The real source of infection may be elsewhere.

"It is not always an easy task roentgenologically to express an opinion upon the condition of the teeth and to state whether they may be responsible for some other pathological condition and yet not necessarily related as cause and effect. The dental surgeon who can visualize for instance the pathology of peridontal infections, would like to know from the roentgenologist the condition of the bone, whether there are signs of reparative reaction, whether atrophic changes are present, whether bone which has thus far resisted shows signs of breaking down and to what degree the bone beyond the teeth is infected.

"In periodontal disease the infection may pass by the way of the lymphatics through the periodontal membrane to the apex of the tooth and from there to the circulatory system.

"If the pulp of a tooth dies there is every chance that the periodontal membrane around the apex of the tooth may become infected. The infection may be slight and pass away, with the result that there will be no area of rarefaction around the end of the tooth. On the other hand, if the infection is more active or is continuous, the bone in the neighborhood of the tooth will be destroyed and its place taken by a mass of granulation tissue or there may be a collection of pus. This adventitious tissue may become walled in by a layer of sclerosed bone. Roentgenograms of such teeth show around the apices well defined areas of bone destruction surrounded by a layer of dense bone. The author does not believe that a tooth in this condition is an active source of infection although it is certainly potential and should consequently be removed. The tooth, however, which is a very active focus of infection is the one where the areas of rarefaction gradually blend with the bone beyond and there are definite signs of deep infection. The roots of such teeth usually show irregular patches of absorption." (Frank Colyer)

Dr. E. F. Thalen, Los Angeles, speaks of the importance of dental impactions and their sequelae, in the *Journal of American Medical Association*, 1923, Vol. LXXXI, 1664. He says that the majority of impacted teeth cause no pathological changes nor no clinical symptoms. He reports eighty-four cases of impactions giving rise to serious conditions requiring the removal of the teeth.

In forty-eight of these cases, the conditions were due to infections; in twenty-three, the symptoms could best be explained by the theory of reflex disturbances due to nerve pressure. In thirteen cases the trouble was in post-operative complications.

In the group of forty-eight of the infected impactions there were nine which resulted in local involvement of soft tissue destruction and osteomyelitis, periostitis and necrosis. In one of these there was a temporal abscess that was cured by free drainage, and another resulted in infection of the temperomandibular joint, with necrosis of the temporal bone. This case terminated fatally.

In thirty-five cases there was evidence of rarefaction of bone about the tooth, and the patients were referred on account of arthritis, neuritis, iritis, gastric lesions and asthenia. There were two cases of maxillary sinusitis from the upper third molar impactions. One case of maxillary sinusitis was cured by removal of an impacted lower third molar. There were ten cases of neuralgia of one or more branches of the fifth nerve. There were four cases of cysts, three being in the mandible. The cases of reflex irritation were selected from the number of those who received relief by extraction.

Of thirteen cases of postoperative impactions, nine showed cellulitis of the neck. Two were accompanied by fracture of mandible. In six there was necrosis. One had persistent neuralgia of the left premaxillary region and two persistent anesthesia of the inferior dental nerve. As a result five patients were the worse for operation, and suffered greatly for a while afterward.

Of the eighty-four cases reported, forty-five were mandibular third molars; thirty-two were of the upper third molars; six were canines and one lower bicuspid.

The late Dr. Byron C. Darling, of New York City, sent a questionnaire to two hundred leading dentists of the United States, asking them several pertinent questions to find out if the medical and dental professions could find it possible to agree on any standard method of treating focal infections about the teeth. The replies from dentists, of course, are interesting and reflect stronger than words the present attitude of dentists toward focal infections of this type.

(1) When periapical pericemental destruction is present, fifty-six per cent of the dentists extract; ten per cent treat first; and thirty-four per cent try to save them by various types of treatment or just leave them alone.

(2) In cases of periapical rarefaction or chronic abscess: Forty-eight extract; forty per cent treat first; twelve per cent save.

(3) There was too great a divergence of methods for root canal treatment to attempt to classify the methods in use.

(4) Seventy-six per cent were using the x-ray for differential diagnosis; and twenty-four per cent were not using it.

(5) Seventy-three per cent were using clinical symptoms; twenty-seven per cent were not depending on them.

(6) Even if bone restoration was in evidence, thirty-eight per cent believed infection remained; forty-nine per cent thought it was cured; and thirteen per cent were undecided.

(7) The majority believe that it is impossible to standardize the dental attitude at this time; some offer hope and suggestion.

(8) In pyorrhea with alveolar destruction an attempt was made to determine what amount of destruction determined whether the tooth should be extracted. The amount of loss of process indicating extraction varies from one-third to two-thirds. Many of them could not decide from this criterion whether extraction should be done.

(9) Forty-two per cent of the dentists were doing their own x-ray work. Forty-eight per cent favored consultation with medical or dental roentgenologists.

(10) Twenty-four per cent were unwilling to consult with the medical profession; seventy-six per cent were willing to consult.

As a standard practice (for as dentists and physicians, and public we need one), I wish to recommend to you once more the principles expressed by Dr. Clarence J. Grieves in the Journal of the National Dental Association for April, 1921.

"The Radiograph: 'In all data submitted, the radiograph and its interpretation is a determining factor. While open to criticism, which will be discussed later, the radiograph, within clinical limitations, is the means by which the extensive occurrence of such lesions was first definitely discovered, not only about teeth, but in many other organs. It is still accepted as a most valuable diagnostic adjunct by the surgeon, so this is hardly the time for dentists to quibble over it.'

"Indispensability of Radiograph: 'The radiograph taken and developed according to the latest technique by those familiar with facial and dental anatomy, in form generally of intra-oral films, sometimes extraoral plates, is simply indispensable'. 'Serious pararadicular disease is occasionally masked by roots paralleled or superimposed on the film; but periapical rarefaction, occurring around the apex, is always visible and diagnostic of a dead apex about which the apical bone can never form, for it is negatively chemotactile.'

"Differential Diagnosis: 'How are we to distinguish between the periapically diseased tooth, where this has resulted in the subapical tissues, in touch with the blood stream (Class VI), and the apically well-filled pulpless tooth, where it has not occurred (Class V)? The answer lies in correct diagnosis of the apical disease, defining the normality of the attaching tissue, namely, cementum, periodontal membrane, and alveoli; all equally as important, if not more than the pulp.'

"Principal among the clinical bony landmarks stands the character and stability of that hard lining of each alveolar socket known as the lamina dural.

"Lamina Dura—its destruction is evidence of pericementitis and definite infection. 'If the cells of these tissues lie in physiologic apical contact, attaching a well filled tooth from which the pulp has been removed, that tooth is healthy, no matter whether it be called a 'nonvital', 'pulpless', or 'dead' tooth. When this contact is broken, periapical infection exists beyond the tooth and can best be diagnosed by radiographic study, modified by clinical symptoms.

" 'Its disappearance in areas, particularly in middle and apical-thirds, with thickening of the dark line representing the periodontium (pericementitis) indicates undue stress of proliferating periodonitis.

" 'Lack of continuity in the lamina is undoubtedly a most valuable symptom of infection advancing beyond the tooth; and, clinically, if it be intact, the cementum should be considered healthy'.

"Proper Root Canal Treatment: 'If pulps can be removed under as nearly aseptic conditions as possible, by careful chemico-mechanical instrumentation, leaving only inaccessible vessels and vital pulp-shreds in the immediate foraminal openings of a vital apex, which has not been cauterized nor over-sterilized; or, if these strong agents can be used without their passing out into the membrane (though conservative operators prefer milder medicaments)—if all this can be accomplished without perforation and encapsulation, avoiding infection from debris, then any canal-filling method, as nearly aseptic as can be, that will close these openings well into, but not through the apex, will insure apices infected as little, and filled as much as possible, and also functional teeth.'

"Bone Repair as Evidence of Cure is Rare: 'Bone repair and sclerosis may occasionally be present as dense as cortical bone, but the trabeculae and partitions of the adjacent normal bone, to which these should be compared, are missing.' 'Sequestra occasionally seem more radiopaque than normal bone and rarefactions may result systemically from osteoporosis, osteomalacia, pregnancy, or calcic waste; in fact, many unusual factors may, but rarely do, appear . . . Exceptional cases cannot be compared with the usual, and should not be quoted, disturbing confidence of honest operators seeking help, nor can they be used by dishonest operators seeking an excuse.'

" 'A cure of periapical disease may be defined as regeneration of the lamina dura and associated trabeculae, comparable to adjacent areas on vital teeth or other operated areas, following extraction and currettement. Such repair is indeed rare'.

"Extract All Infected Teeth Showing Definite Periapical Disease: "There is little use in consuming time for a consideration of the teeth of Class VI (infected teeth, septic pulp, involved by periapical disease). They have been much discussed in former papers and are really not worth while, for the reason that no adequate treatment is known which will certainly cure the suppurative, granulating, or cystic phases of apical disease, except surgery.

" 'Any treatment of this latter type seldom succeeds; subapical bone may appear as if repaired, but soon breaks down, invading a larger area.

" 'If there be the slightest question, it is better to err radically, and remove a doubtful tooth, than to risk inevitable damage to adjacent teeth, attaching tissues, or the maxillae and possibly the patient's health.

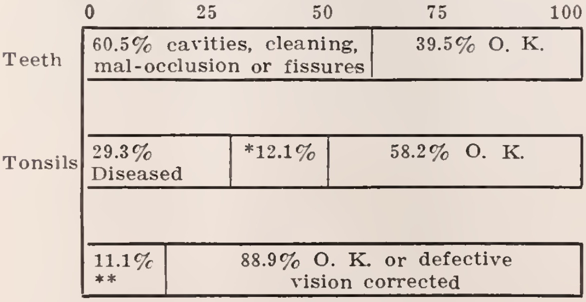
" 'From an entire pyorrhetic denture, undermined and swaying in purulence, to a single locked periapical area walled off by condensing ostitis or schlerosis, Nature's best protective procedure, is a far cry in pathology; and yet we know the former may do less systemic harm than the latter; just as the hypertrophic pus tonsil may not be a focal factor, while the apparently normal tonsil, with its virulent crypt, may be most active.'

"The Dentist Should Not Assume Medical Responsibilities: 'The dentist, who, without medical assistance of the highest order, attempts to distinguish between the sick and well patient, and who presumes by a glance and a few routine questions to determine instantly matters which might keep hospital laboratories busy for days, dabbles superficially in internal medicine, when he does not know the actual etiology of or sure treatment for a single dental disease'."

THE PROBLEM OF HEALTH HANDICAPS IN LINCOLN SCHOOL CHILDREN

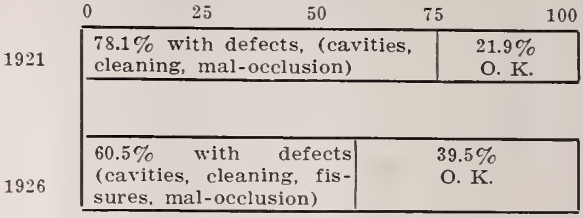
There has been a slight but encouraging decrease in certain types of remediable health handicaps found among Lincoln school children during the past five years. That there has been a decrease does not mean that there is little yet to do. There is much to do if what can be done is accomplished.

PERCENT OF PUPILS WITH AND WITHOUT MOST COMMON DEFECTS, SEPT., 1926



*Questionable. **Defective uncorrected.

TEETH DEFECTS 1926 COMPARED WITH 1921



PUPILS HAVING TEETH DEFECTS SEPT., 1926

Per Cent Teeth Defects in Elementary Grades....59.6
Per Cent Teeth Defects in Junior High Schools...53.5
Per Cent Teeth Defects in Senior High Schools..68.4

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OPERATION FOR RELIEF OF PARALYSIS OF GLUTEUS MAXIMUS MUSCLE

Frank R. Ober, Boston (*Jour. A. M. A.*, April 2, 1927), transplanted a long strip of fascia lata obtained from the lateral aspect of the thigh to the freed spinal muscles. The outer half of the erector spinae with its aponeurosis was separated from the inner half and from the muscles lateral to it. The muscle thus split off was freed from the body and crest of the illus, from the sacrum, and from the transverse processes in such a way that a free flap of muscle about 5 inches long, 1 inch wide and three-fourths inch thick was obtained. Then a strip of tensor fasciae latae was freed as in Legg's operation, but the incisions in the fascia were carried down the leg farther. This strip was drawn through a hole drilled through the femur just below the neck at the level of the gluteus maximus tendon. The edges of the fascia were sutured to the gluteus maximus tendon. The free end of the erector spinae muscle was sutured to the fascial flap. The end-result is said to have been good in the fifteen cases in which the operation was done.

TRAUMATIC ANEURISM—SUTURE OF WOUND IN FEMORAL ARTERY. POPLITEAL ANEURISM—RESTORATION OF THE CONTINUITY OF THE ARTERY.

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History tells us that the surgery of the arteries dates back to the beginning of the Christian Era. Celsus recommended the use of the ligature and Galen who lived in the Second Century, employed the ligature and told in what shops in Rome both linen and silk material could be obtained. Antillus, Third Century, devised an operation for the cure of aneurisms by ligature, which is sometimes advantageously employed today. Nothing much else is found in the writings of the ancient surgeons prior to the time Ambrose Pare (Sixteenth Century), who strongly advocated the general use of the ligature. Since Pare's time it has been the chief instrument for the control of hemorrhage, and the cure of aneurisms. Today the suture has in a measure displaced the ligature both for the control of hemorrhage from wounded blood vessels of large size, and for the cure of aneurisms.

On April 9, 1927, a man, aged 43 years, was admitted to the University Hospital with the history that on March 28th he had accidentally wounded himself with a large pocket knife. The blade entered the thigh, medial side, slightly above its middle. There was a profuse hemorrhage which was controlled by a neighbor tying a string around the thigh above the wound. The man was taken to a hospital where a suitable compression dressing was applied, and on April 9th he was admitted to the University Hospital. On the mesial side of the thigh, occupying its medial portion, there was a large fusiform, pulsating swelling about 5½ inches long by 4 inches wide. Inferiorly in the swelling there was a small healed wound one-half inch long. The thigh was flexed on the abdomen, the leg on the thigh, hamstring tendons contracted; the upper posterior portion of the thigh was ecchymotic, likewise its buttock, and the perineum. The pulsation in the swelling could be obliterated by compressing the common femoral artery against the pubis, thus establishing the nature of the injury, a traumatic aneurism of the femoral artery.

Operation, April 14, 1927: The common femoral artery was exposed and a Crile compression clamp applied so as to obliterate the pulsation in the aneurism; a free incision was made over the length of the aneurism; all clots removed; a wound one-half inch long was exposed in the long axis of the femoral artery. This was closed by a continuous suture using a very fine, round curved needle armed with double-0, vaselined, sterilized silk. The sutures were introduced so as to evert the edges of the wound, thus applying intima to intima. The screw of the Crile compression clamp was gradually released and it was found that there was no leakage from the sutured wound, and that the circulation in the artery was completely re-established. The incision wound was closed by tier suture. In order to lessen the strain upon the suture line in the wounded artery, a sand bag was fixed over the upper portion of the thigh and allowed to remain for twenty-four hours. Convalescence was ideal and the restoration of function of the extremity was rapid, the incision wound having healed without disturbance.

The practice of suturing wounded blood vessels came into use recently as compared with that of the use of the ligature in the treatment of aneurisms, and although an English surgeon is reported as having sutured the brachial artery about the middle of the Eighteenth Century, still practically nothing was accomplished until recent years, except more or less successful experimental work upon animals. The first successful resection and end to end anastomosis of an artery was by the late Dr. John B. Murphy, in 1897. He used an invagination technique in repairing by suture a bullet wound of the femoral artery. Since that time occasional successful resection and suturing of rather extensive wounds in large arteries and veins has been carried out. This success depends upon the same principle, but opposite technic, as that employed in anastomosis and repair of wounds in the gastro-intestinal tract. Endothelial surfaces must be approximated and held against each other by suture or some mechanical means, until repair takes place. In the intestine it is the peritoneal surfaces which must be inverted, one against another, i. e., the line of suture must be turned in. In the blood vessels, in order that the endothelial surfaces be turned one against another, the line of suture must be everted because the intima is the endothelial surface. It is usually recommended that mattress stitches be employed in the making of anastomoses or suturing of wounds in arteries and veins, because this suture really approximates the intima surfaces. The sutures must, of course, penetrate all coats of the blood vessels (arteries or veins). Fine, straight needles are recommended for this purpose. As there are few very large blood vessels which lie near enough to the surface and admit of sufficient exposure to handle a straight needle conveniently and dexterously, I prefer a fine, round, curved needle for this purpose, and have used it on a number of occasions, particularly in the suturing of wounds in large veins where the application of lateral ligatures was not practicable.

POPLITEAL ANEURISM

A man 33 years of age was admitted to the University Hospital on April 9, 1927, complaining of a large pulsating swelling in the popliteal space of the right extremity. Five years ago he had what was diagnosed at that time, a chancroidal infection. No secondary symptoms had been noticed. The popliteal swelling was characteristically an aneurism. He had only noticed it sufficiently to be inconvenienced for about six weeks prior to entering the hospital. He had a 4-plus Wassermann. Pulsation could be felt in the posterior tibial artery behind the internal malleolus.

Operation, April 16, 1927: An elastic tourniquet was applied above the knee joint obliterating the pulsation in the aneurism. A liberal, longitudinal incision exposed the sac, over which coursed the distributing branches of the popliteal nerve. These were retracted. The popliteal vein was so intimately adherent to the sac that about two inches of it had to be excised. The sac was then freely opened in its long axis, the clots turned out, and it was found that there was a single opening about a centimeter long, in the artery. It was decided to attempt to restore the continuity of the artery. A line of continuous suture was introduced so as to close the opening and at the same time not encroach upon the calibre of the artery. A small, round, curved needle armed with number 0 chromic catgut was used. This line of suture was reinforced by several layers of suture introduced into the contiguous walls of the sac. None of the sac was cut away, but it was inverted and the wound sutured in layers and closed without drainage.

Postoperative History: The pulsation in the tibial artery which was present before operation continued, and remains present to date. Unfortunately, some infection occurred in the wound, but this was not deep enough to jeopardize the successful result of the operation. There has been some loss of the function of the ankle joint, because of the retraction of nerves, necessary for the exposure of the sac. This will disappear.

The resection of the popliteal vein brings out an interesting point in the ligature of large arteries: We have been taught that in ligating a large artery in continuity, we should carefully preserve its principal vein when practicable. Comparatively recent animal experimental work, with some corroboration in the human being, seems at least to disturb the opinion concerning this precaution. Now, we are told that the vein should be ligated at the same time as the artery and that the ligation of the vein should be done at a considerable distance proximal to the point of ligation of the artery. The theory upon which this is based depends upon the fact that when we ligate, for instance, the femoral artery, and do not ligate the femoral vein, we shut off most all of the arterial blood going to the part below, thereby lowering the peripheral blood pressure to such a degree that the tissue cells will be deprived of their nutrition, and gangrene may result. Now, in order to maintain a necessary, minimum degree of blood pressure in the extremity in such an instance, if the accompanying vein is ligated at the same time that the artery is, sufficient peripheral blood pressure will be maintained, and thereby the tissue cells supplied with nourishment and kept alive until the arterial collateral circulation is established, and the venous return through the deep and superficial veins is balanced.

It is interesting to note in the case of the popliteal aneurism just narrated, that after the operation there was no change, and has not to date been any, in the pulsation of the posterior tibial artery, proving that the current in the popliteal artery was not disturbed by the formation of a local thrombosis, an event which not infrequently happens in similar circumstances. It is also interesting to note that almost immediately after the operation (and it is also observable now) the superficial veins of the leg were noticeably prominent, showing that the resection of the popliteal vein has forced the return circulation into the deep and superficial veins.

—222 Bankers Reserve Life Building.

"We cannot expect an immoral man to become a moral physician. Medicine opens a wide field to the man without conscience. Is there a picture of more abject depravity than the physician given to the many forms of illicit practice, aiding and abetting crime, actually committing crime, preying on the afflicted in body and soul, capitalizing misfortune itself? How often in our own times have we seen physicians,well endowed mentally and physically, but lacking in that very necessary foral fiber, without which all their efforts resulted finally in dismal failure."

"The social side of medicine is sadly neglected by a large majority of the profession. To many this would seem of no importance, and while present conditions are no doubt due more to the stress of work than to lack of social inclination, all of us would be much benefited by a more frequent and closer association with our colleagues. We would be certainly more tolerant of each other and there would be far less misunderstanding, due so often to the misquotations of patients, inadvertent or intentional."

THE EPIDEMIOLOGY OF TUBERCULOSIS

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This subject was selected by me so that some of the recent researches in tuberculosis might be presented for your consideration, particularly, as they seem to overthrow so many of our commonly accepted theories in regard to this disease.

This problem became particularly important at the time of the World War when such large numbers of men of all classes were brought together under circumstances of exceedingly close proximity, and where it might have been expected that an acute epidemic of tuberculosis would have resulted. Although every effort was made by most of the warring nations to eradicate the actively tuberculous, yet in the necessary rapid examination there was a considerable number that were missed. The report of the German Army shows the incidence of tuberculosis per thousand of mean strength 1914-15, 2.8; 1915-16, 1.7; 1916-17, 1.1; 1917-18, 0.78. The reports of the allied armies show almost identical figures.

Colonel Bushnell, under whose guidance these examinations were conducted in the American Army, was not surprised at these figures for he firmly believes "that practically all civilized adults, even the most healthy, have undergone a tuberculous infection" as is evidenced by autopsies of individuals dying from other diseases, the von Pirquet test, and radiographic examinations upon the healthy subject.

This makes it necessary to distinguish between tuberculous infection and tuberculous disease, or, to put it another way, immunity against tuberculosis and manifest tuberculosis.

The conception of inherited tendency fits in fairly well with the facts in communities where the disease is endemic, and if it were true, one would expect that members of communities where the disease is rare would exhibit a high degree of resistance to infection if they should come in contact with the tubercle bacillus. The evidence available suggests the reverse of the case. If a tuberculous diathesis plays a part, cases should be more benign among races free from any possibility of hereditary disposition. Here again the facts are otherwise.

There have been numerous reports of tracts in Africa and the South Sea Islands as yet untouched by European emigration and civilization where tuberculosis has not been met with. Chapin and Gerlock, as early as 1837 and 1855, mention the rarity of tuberculosis in the Hawaiian Islands.

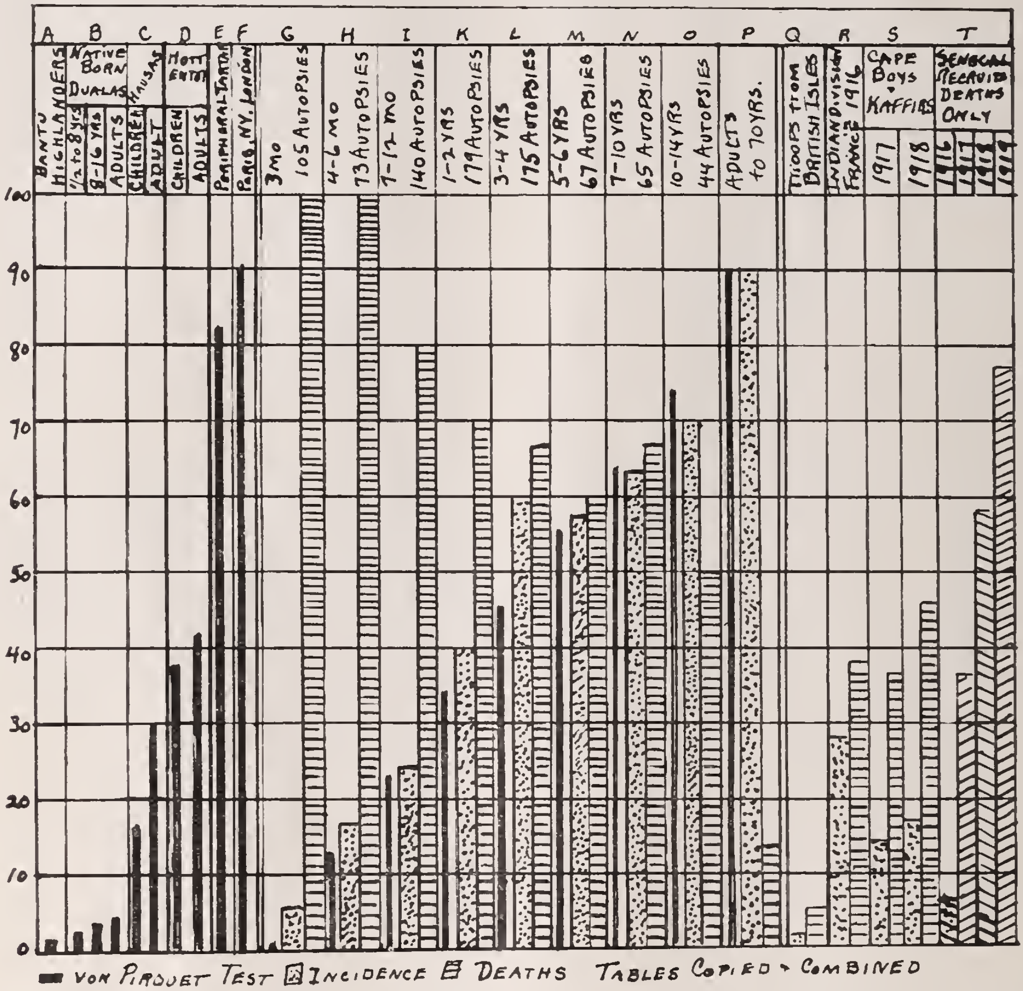
Tests of the way these tribes receive tuberculosis have been widely made. The von Pirquet tuberculin test in Europe and America gives a negative result (G in chart) in those persons, such as infants, who have never been exposed to tuberculous infection but the percentage of positives rises rapidly as increasing age leads to contact with the tubercle bacillus (G to P). This test affords a reliable index to the distribution of tuberculous infection. The use of this test in New York, Paris, Vienna, Berlin or London has taught us that 55 per cent of the children who have reached their fifth year(M), and more than 95 per cent (P) of adults harbour the bacillus. This does not mean that all these persons are tuberculous.

In contrast, notice the chart of observations of Ziemann in the Cameroons. The very low percentages of positive reactions among the Bantu highlanders (A) from the West African plateau, and native born Dualas (B) of all ages, contrasts with relatively high percentages among the Hausas (C) and Hottentots (D), mixed races that have been associated for years with Arabs and to some extent with Europeans. There certainly is no trace of hereditary tendency to tuberculosis in these tribes.

How then do these peoples react when exposed to tuberculous infection. Figures in the late war, for instance, show that in the British troops (Q), average strength 1,500,000, there was a total of 1660 cases of tuberculosis in 1917, with mortality of 91; in Cape Boys (S) and Kaffirs from the South African Labor Corps, average strength 11,000, there were 156 cases with 69 deaths. In 1918 there were 1221 cases with 74 deaths in the British troops and 171 cases with 115 deaths in the South African troops. 165 deaths in 2881 cases or 5.7 per cent among the British; 183 deaths from 327 cases or 56 per cent among the Africans. These units were subjected to the same thorough examination and lived under the same conditions except that the Labor Units were spared the strain and hardship of battle conditions and lived in comfort on the lines of communication. One cannot argue that alcohol, over-crowding, European vices, etc., had in such instances anything to do with the high mortality. We must conclude that members of isolated communities in which the tubercle bacillus is rare or absent show an extreme susceptibility when brought into contact with people among whom tuberculous infections are common.

The type of disease is rapidly fatal, not characterized by fibrosis, and usually terminates in the average of 31 days, a disease known as acute tuberculosis. According to Romer's law, "where tuberculosis is a rare disease the cases that occur will be acute and fatal; where the disease is common the type will be chronic and relatively benign."

Let us now contrast with the study of the races the course of tuberculosis in individuals of civilized communities. Hamburger has shown that in 178 autopsies on children under six months (G and H) 117 only were found tuberculous, in all of whom this was sole cause of death. In 140 from six months to one year (I) 32 were found tuberculous, of whom 27 or 80 per cent died of this sole disease. The percentage of lesions found increase rapidly after the first year to 53 per cent at age of 14 years (O), with mortality of only 50 per cent. Holt has shown that "those children who die from tuberculosis usually show diffuse lesions and the younger they are the more diffuse the disease." This is the same clinical type of acute tuberculosis so well described in the African troops referred to above.



This phase of susceptibility soon passes with advancing years, older children and adults (P) show a higher percentage of positive tuberculin reaction, a larger proportion of localized tuberculous postmortem lesion, and when infected to the point of clinical manifestation, a more chronic type of illness.

Here, then are two opposed and yet complementary forces, infection producing or eliminating resistance, resistance defying or modifying infection, each manifesting itself by virtue of the other and the two co-existing, in an endless series of inverse combinations, in all cases of tuberculosis.

There are two general types, the acute or primary form occuring in infants or uncontaminated tribes, who have had no previous immunizing infection, differing both in their progress and pathology from the second class, the chronic form such as is familiar to us. This later is due to massive infection with failure of proper immunizing infection and rarely to a new or recent adult infection.

I cannot refrain in this connection from reading for you a report of the mortality of tuberculosis at Lippspringe which is a report of a town in Germany renowned for a tuberculosis cure, extending over a period of 76 years.

"The Mortality from Tuberculosis of the Inhabitants of Lippspringe." *Werner, Beitr, XIX,* 352.

The population (permanent) of Lippspringe in 1830 was 1440, in 1909, 2473. The absolute tuberculosis mortality has diminished from a yearly average of 14.9 in the decade 1831-1840, the decade of the opening of the bath, to 12.25 yearly average in the four years 1906-1909. The percentage of tuberculosis to total mortality fell from 31.2 per cent to 23 per cent. The relation of tuberculosis mortality to one thousand inhabitants fell from a yearly average of 9.8 in the decade 1831-1840, to 3.5 in the four years 1906-1909. It may be affirmed that for the decision of the question as to danger of infection from tuberculosis, especially pulmonary tuberculosis, at no time and nowhere in the world has a natural experiment of such extent and duration been made as in Lippspringe, for the period of observation extends from 1883, the year of the founding of the bath, to 1909, or 76 years. In these 76 years Lippspringe has been visited by 170,000 patients in round numbers. Of these certainly 80 per cent or 130,000 were patients with pulmonary tuberculosis, of whom at least one-third, or 45,000 were so-called open cases with tubercle bacilli in the sputum. The number 1000 (of patients) was reached in 1867, 2000 in 1874, 3000 in 1897. In 1896 the first state or insurance sanatoria appeared. From that time the number of patients rose rapidly. In 1906 there were more than 6000. Frog 1906 to 1909 the average number was about 8000. This yearly accumulation of pulmonary tuberculosis does not occur during the entire year, but, especially in early times, in the season—April to October —and not over a wide territory, but in a small place for the most part rather closely built up Taking into consideration the number of open cases we may affirm that nowhere in the world has there been such a dissemination of bacilli as in Lippspringe since the establishment of the bath. It is to be considered that until the discovery of the tubercle bacillus by far the greatest number of doctors were not convinced of the infectiousness of tuberculosis. And especially in Lippspringe as the records show the old doctrine of crasis prevailed. No one then had the slightest idea of any control of expectoration. On the contrary, the more frequently the patient expectorated the better it was, for by the sputum the dyscrasia was removed from the body. Even after the discovery of the tubercle bacillus the view of the infectiousness of pulmonary tuberulosis spread very slowly among the public, the population of Lippspringe and the doctors there. We may affirm that only with the appearance of the insurance patients in good numbers in 1899 was any great attention paid to controlling expectoration.

Another important fact which concerns the population of Lippspringe is the following: The peculiar development of the bath did not lead at first to the building of large hotels and sanatoria in which the guests were more or less isolated from the population, but the latter by renting of rooms, nursing and by taking boarders was from the beginning in very close contact with the patients. The keeping of boarding houses increased greatly, especially after the patients of public sanatoria came in large numbers, so that it may be affirmed that since 1899 every second house shelters and cares for patients. From this it follows that half of the population during the summer are in constant contact with patients. This is especially true of boarding houses for public sanatoria, for the patients of these are much more intimately brought in contact with their landlords than patients of other classes. Moreover, but few domestics were hired. In general the family itself attended to the housework, especially the cleaning of rooms.

A further important fact for the interpretation of this natural experiment is that the population of Lippspringe is very stable. Emigration practically never takes place. Therefore every case of infection must have become known. We have then a crowding together of numerous cases of pulmonary tuberculosis in a relatively small place and in a small community with enormous production and dissemination of tubercle bacilli for seventy-six years, the absence of all protective measures until about 1900, or sixty-seven years, on account of the close contact a very considerable exposure of the population, together with originally unfavorable hygienic conditions, a great stability of the population and a diminution of the relative tuberculosis mortality of about one-third. From this it follows with certainty that the view of the contagionists as to the high infectiousness of pulmonary tuberculosis is totally false. If it were not the whole population of Lippspringe under the conditions described must have been infected and must have died out.

In contrast let me review the report of the Graucher Institute in Paris. This is an institute for the Protection of Children from Tuberculosis. Children of tuberculous parents are confided to the care of foster parents away from congested centers in the country in homes vouched for by careful physicians, there to be brought up to the age of twelve to fourteen years. And from the improvement of health their report shows that 2200 chcildren have passed through its hands in whom there have developed only seven cases of tuberculosis, two have died, and these of meningitis immediately after their reception into rural homes. In a statistical study of 165 tuberculous families, the morbidity from tuberculosis among children left in the care of their infected relations was 60 per cent, not counting those in whom the disease remained dormant to become active later on. The mortality in several years was close to 40 per cent.

Where one contrasts morbidity of 60 per cent and mortality of 40 per cent as against a morbidity of 0.35 per cent and mortality of 0.1 per cent where children are removed one cannot but be staggered at the problem before us.

One must feel that we lay less stress upon the dangers of adult infection and more upon that of the non-immunized infant and recently immunized young child. We should improve in every possible way the health of the community so that a fortunate initial infection shall not be impaired and converted into a manifest and dangerous disease. Can we not as Colonel Bushnell so aptly puts it, look forward to the time when nature's method of tuberculinization, so terribly wasteful of human life, shall be replaced by a thoroughly scientific method of artificial inoculation in which no life shall need be sacrificed?

INTRAOCULAR LESIONS CAUSED BY DIRECT CONCUSSION OF THE EYEBALL

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Cases coming under the title of this paper are sometimes seen and diagnosed soon after injury. In other instances, the intraocular lesions cannot be made out in detail until long after the injury has occurred. The frequency with which such injured eyes are seen, and the great variations in the extent of the intraocular lesions attach to the subject more than passing interest. The aim of this presentation is to bring to mind the great variety of intraocular lesions that may result from direct concussion of the eyeball, with brief comments as regards their effect upon vision.

Among the common causes of such injuries are blows and kicks, the impact being made directly against the eyeball or against the intervening eye lids. In a like manner, injuries occur from blows of baseballs, footballs, golf balls and other impedimenta used in athletic games. In the industries, such injuries are frequently sustained by employees in mines, quarries and factories where missiles are hurled during the processes of blasting, picking, chiseling, et cetera. In the industrial injuries of this character the trauma of a blunt object may be associated with an injury from air concussion; especially in the trades where explosives are used or manufactured. Due to the restrictions placed upon the sale of fireworks during the past few years, the number of intraocular injuries from this cause has been greatly reduced. However, from the mild explosives that are still obtainable, many intraocular injuries are caused each year. The ophthalmic literature of the World War furnishes an abundant report of intraocular lesions caused by direct concussion of the eyeball.

The manner in which the element of force is applied against the globe is of marked significance insofar as the intraocular structures are concerned. An indirect blow against the eyeball is not so apt to produce severe damage, as when the impact is direct, even though the force is greater in the first instance. While the eye possesses considerable ability to withstand injury from external violence, yet very mild trauma that causes a concussion of the globe is frequently noted to cause grave intraocular lesions. Ocular concussion is always more severe when force is applied in a direct line against the front of the globe.

The external aspect of the eye, after such injuries, may lead one to feel on cursory examination that little intraocular damage has been done. For insatnce, it is possible for such a severe lesion as retinal detachment to be caused by a blow upon the eye without any external evidence of injury. On the other hand, intraocular lesions resulting from such a cause are generally associated with extraocular lesions. These associated ocular lesions may include any of the following: Swollen, contused, lacerated or hemorrhagic lids; irritative conjunctivitis, subconjunctival hemorrhage, chemosis of the conjunctiva, laceration or contusion of the conjunctiva; corneal abrasions involving the deep layers of the cornea or superficial abrasions of the cornea; rupture of the cornea; rupture of the sclera; palsy or paresis of the extraocular muscles; periostitis or fracture of the bones of the orbit.

In a search for intraocular lesions, the usual routine is to study the structures from before, backward. In this manner one would observe the anterior chamber, the iris, the pupil, the ciliary body, the lens, the vitreous and the background or in a similar sequence.

In studies of the anterior chamber the examiner finds varying degrees of hemorrhage as the principal lesion. The anterior chamber may be entirely filled with blood or the hyphemia may be small, appearing as a red line at the bottom of the anterior chamber. After severe contusion of the globe, the lens is sometimes extruded into the anterior chamber, but this is of infrequent occurrence.

Among the intraocular structures that are subject to injury from concussion, the iris is the most frequently involved. Due to the marked vascularity of the iris, mild contusions of the eyeball frequently cause iris hyperemia. In this condition, only a color change of the membrane is noted. At times when the contusion is greater, tiny droplets of blood stand out upon the iris. When the injury is more severe, the hemorrhage may be sufficient to mask all of the intraocular structures. In this condition, the intraocular tension may be materially increased, due to the obliteration of the filtration angle. The tissue of the iris is seldom lacerated at any point other than its ciliary border or pupillary border. When the iris is torn at its ciliary body attachment, the extent of the iridodialysis is variable. It may be so small that it would be unnoticed by the patient or it may be so great that it would cause monocular diplopia. The lesion is usually of sufficient size to cause a flattening of the pupil on one side. When this lesion is relatively small and atropine is employed vigorously soon after injury, the wound edges may become coaptated. In rupture of the pupillary border, the lesion is seldom of great extent and is observed as a notch in the edge of the pupil. Infrequently, with rupture of the pupil from contusion, there are small holes or tears in the iris (polycoria) close to the pupillary border. Iridodonesis or tremulousness of the iris from a weakening of the zonula is observed with relative frequency after contusions of the globe. The condition is associated with dislocation of the lens and is accompanied by grave visual disturbances. Following irido-dialysis and tension from profuse iris hemorrhage, localized areas of iris atrophy develop. These lesions appear as gray, lusterless areas of the iris from which the delicate markings of the membrane have disappeared. Obviously, the lesions may be multiple or single and are permanent. According to Fuchs, when the entire iris has been torn loose (circular iridodialysis or aniridia), the iris becomes a small atrophic ball at the bottom of the anterior chamber within twenty-four hours. Beside aniridia, De Schweinitz cites two other types of displacement of the iris; namely, retroflexion and anti-version. He describes retroflexion of the iris as a folding back of a portion of the iris upon the ciliary processes, usually accompanied by a partial dislocation of the lens. Antiversion, as described by De Schweinitz, is a turning upon itself of the detached portion of the iris, so that the under or uveal surface is exposed. In studies of the pupils following ocular concussion, the examiner is often confronted with the problem of pathogenesis of mydriasis or miosis. Either condition may result from the same kind of trauma. Likewise, either lesion may be paralytic or spastic. In paralytic mydriasis there is no reaction of the pupil to light and there is no pupillary contraction after the instillation of a miotic drug. In spastic mydriasis, the pupil reacts to light and instillation of a miotic drug causes contraction of the pupil. When the sphincter pupillae fibers are not completely paralyzed, the instillation of cocaine solution causes a farther dilatation of the pupil. By this means, the condition of paretic mydriasis is differentiated from paralytic mydriasis. In paralytic miosis (dilatator paralysis), the pupil reacts to light and is susceptible to the physiological action of miotic of mydriatic drugs. The pupil in spastic miosis does not react to light. It is readily dilated by a mydriatic and further contracted by a miotic drug.

Closely allied to the neural lesions of the iris are the neural lesions of the ciliary body; namely spasm and paralysis of the accommodation. In many instances the neural lesions of the iris and ciliary body are associated after concussion injuries, but either structure may be affected without injury to the other. The effect upon accommodation is dependent upon the severity of the ciliary body damage. In other words, if the injury of the ciliary body is not severe, spasm of accommodation from irritation of the third nerve endings may result. If the concussion is more severe, paralysis of the accommodation may ensue.

Notable among the concussion injuries of the ciliary body is cyclodialysis. In this lesion the separation of the ciliary body from the sclera may be great or small. According to the opinion of Fuchs, it is found rather frequently in anatomical specimens. It is questionable if the clinical diagnosis of the lesion is made in any, other than pronounced cases. The most frequent ciliary body lesion following a contusion of the globe is hemorrhage. The bleeding may be confined to the substance of the ciliary body or it may escape into the vitreous body in such quantity that the vitreous will be literally permeated. While resorption of most of the extravasated blood in the vitreous is the rule, yet at times organization of the blood occurs causing various kinds of opacities to remain. Not infrequently following a concussion of the globe a condition of the ciliary body results that resembles a low grade inflammatory process. In other words there is some alteration in the ciliary body resulting from trauma. The condition is not described in text books although it might be considered clinically as traumatic cyclitis. The predominant findings in this condition are pericorneal injection, diminished intraocular tension and fine vitreous opacities. Under the usual management of such cases; that is, instillation of atropine, application of moist heat and internal administration of salicylates, the improvement is both rapid and complete.

Some mention was made previously of dislocation of the lens into the anterior chamber. A more frequent happening from direct concussion is partial dislocation of the lens. In this condition the zonula is ruptured incompletely and retains some attachment to the lens. In some instances the lens is entirely dislodged into the vitreous body. In any degree of traumatic luxation of the lens, the lens ultimately becomes cataractous. By setting up irritation within the eye, it may cause iridocyclitis and glaucoma. In cataract following direct concussion the lens capsule may or may not have been ruptured. It is the opinion of Fuchs that in such injuries the lens changes are not necessarily brought about by the action of the aqueous or vitreous upon the lens substance. It is probable then, that so-called traumatic cataract may be due to an altered state of lens metabolism. It is the rule in cases of traumatic cataract for the lens opacity to become total. In some cases, however, the opacity of the lens does not increase, but remains stationary as a partial cataract.

Frequently noted in contusion of the eyeball is Vossius ring cataract. Ophthalmoscopically, it appears as a faint gray ring on the anterior capsule of the lens, having the size and shape of the pupil. According to Hess the opacity consists of blood. Vogt concluded from his studies that the opacity may be blood or a mixture of blood and fuscin granules of the iris. Zentmayer has reported a case in which the opacity was noted following hemorrhage from the ciliary body and in which there was no contusion.

Compared with the iris, the choroid is inelastic and ruptures easily upon contusion of the eyeball. Rupture of the choroid generally occurs in the region of the optic papilla; sometimes occurring as a single laceration, sometimes multiple. Due to its location in the posterior pole this lesion is easily studied when the media are clear. The effect upon vision depends upon the situation of the lesion; that is, if the choroid is not involved between the fovea and the optic papilla, vision is not much altered.

Most retinal lesions developing after direct concussion of the eyeball are situated in the posterior pole. Notable among these lesions is hemorrhage from the retinal vessels. The hemorrhage may be limited to the layers of the retina or may occur between the internal limiting membrane of the retina and the hyaloid membrane of the vitreous. Pre-retinal or subhyaloid hemorrhage is frequently observed in the macular region and for this reason it is of the greatest prognostic importance. The hemorrhage may absorb completely; or failing to do so, may result in retinitis proliferans. In the former condition, vision is unaffected; in the latter, central vision is, of course, destroyed. Analogous to retinal hemorrhage in its effect upon vision, is rupture of the retina. When this lesion occurs in the macula or between it and the nerve head, visual acuity is greatly affected. When it occurs elsewhere, the effect upon vision may be negligible. Detachment of the retina may result independently of other traumatic lesions of the choroid or retina.

However, it is generally noted in conjuction with other intraocular lesions and occurs in eyes that are predisposed through the existence of high myopia. Commotio retinae or Berlin's Edema must always be regarded as a serious lesion on account of the bad prognosis which it often portends. It is frequently associated with or succeeded by hole in the macula. In the latter condition, vision is greatly reduced. Traumatic macular disease is another frequently observed lesion following direct contusion of the eyeball. It is generally slow in its development, sometimes not presenting sufficient evidence for its diagnosis until several weeks after the injury was sustained. In this disease, the vision is permanently reduced. The optic papilla or intraocular portion of the optic nerve is seldom affected independently in concussion injuries. Hyperemia of the disc is frequently observed when other intraocular structures are injured. As a late finding, after contusion of the eyeball, optic atrophy may be noted. When this lesion occurs it is typical of primary optic nerve atrophy and can be diagnosed from the ophthalmoscopic image.

VEINS OF THE HEAD AND FACE AND THEIR RELATION TO INFECTION

APPLIED ANATOMY

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The blood sinuses of the dura and the veins of the head and face are in direct connection. It is this communication that makes certain infections of the head and face exceedingly dangerous.

In general, the external jugular vein drains the greater part of the scalp through the superficial temporal veins and the deep part of the face through the internal maxillary vein.

The internal jugular vein drains the sinuses of the dura and the superficial part of the face through the anterior facial vein. This latter vein begins on the forehead as the frontal and supra-orbital veins which join above the internal canthus of eye to form the angular vein, which continues across the face as the anterior facial receiving the superior labial and the deep facial, a branch communicating with the pterygoid plexus, (deep face) Fig. 1. These veins are valveless.

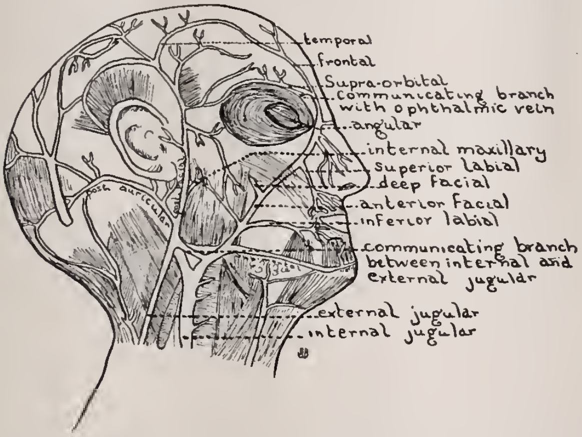

Fig. 1. Veins of the face. The external jugular drains the scalp and the deep part of the face through the internal maxillary. The internal jugular drains the sinuses of dura and the superficial part of the face through the anterior facial.

The supra-orbital vein before uniting with the frontal, sends a branch backward through the supra-orbital notch to join the ophthalmic vein which in turn empties into the cavernous sinus, (Fig. 2).

The sinuses of the cranium are spaces between the layers of the dura mater whose functions are to return venous blood from the brain and its coverings, the diploe (at least in part) and the greater part of the blood from the orbit and eyeball. They communicate with veins external to the cranium and empty directly or indirectly into the internal jugular vein.

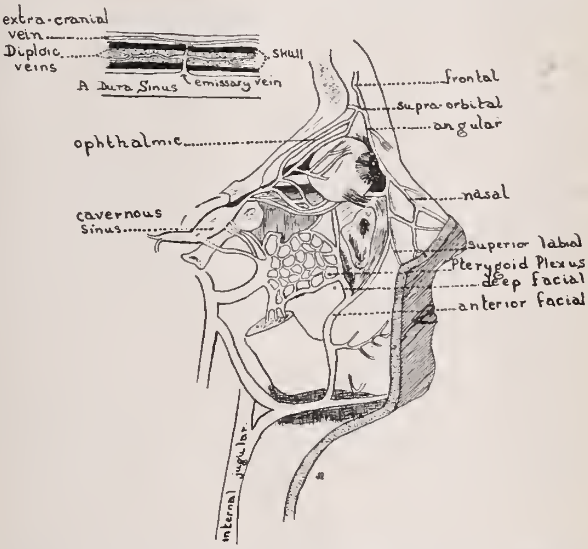

Fig. 2. The supra-orbital vein communicates with the cavernous sinus through the ophthalmic vein. The deep facial vein communicates with the cavernous sinus through the pterygoid plexus. Small drawing illustrates the communications of the extra-cranial, diploic, and emissary veins and a dura sinus.

The cancellous bone between the two tables of the skull is traversed by a rich plexus of veins termed the diploic veins.

The term emissary is applied to those veins which pass through the skull making connections with the sinuses on one hand, and with the extra-cranial veins on the other. The diploic veins empty into the emissary veins, (Fig. 2).

The head and face may be divided into three areas as regards the potentiality of infection extending through veins into the cranium, (Fig. 3). The first and most serious area for infection is the middle triangle of the face. The veins of the upper lip and nose tend to run upward to the anterior facial and angular veins. Infection may spread through the angular vein, through the superior ophthalmic and into the cavernous sinus, or it may travel by the deep facial, through the pterygoid plexus and into the cavernous sinus, resulting in thrombophlebitis or meningitis, (Fig. 2). Infections of the nose, air sinuses, teeth, pharynx and tonsils may also follow this route. Infections of the nose may also travel through a vein in the foramen caecum (roof of the nose) and then into the superior longitudinal sinus.

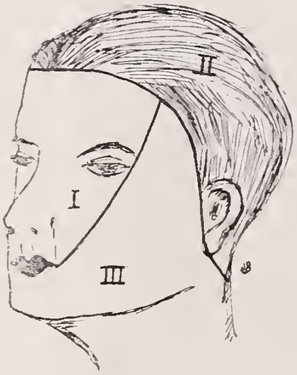

Fig. 3. The head and face may be divided into three areas as regards the potentiality of infection extending through veins into cranium.

The second is the parietal, temporal and occipital areas, where infections of soft tissue and bone may follow the emissary and diploic systems and reach one of the dura sinuses.

The third area is the side of the face and lower lip. Here the infection may extend into the first or second area and then enter the cranium.

The skin of the face is very vascular and is intimately connected with the subcutaneous tissue in which are embedded the facial muscles. Over the nose, lips and chin the subcutaneous tissue is very dense, allows very little swelling and infections are very painful. . . Infections of the face are also painful and tend to spread because of the inability to immobilize the infected area. The contracting muscles have a pumping action.

To demonstrate the mechanism of a middle triangle infection, the upper lip is taken as an example. The pathology is cellulitis, perivasculitis or vasculitis and an edema which is gradually increasing the pressure. Movements of the facial muscles in eating, talking, etc., tend to spread the infection. The treatment is to avoid all trauma to the area by any measure such as pressing or squeezing, which may dislodge or force infective material into the veins. In the early stage when swelling and pressure is not too extensive, dry or moist heat and a mercury ointment is advisable. It is most important to gently keep removed all crust and scab formations. If extension continues, internal pressure becoming greater and favoring further extension into and upward in the veins, I believe it advisable to make an early incision with a razor blade in the most gentle manner, no packing unless bleeding is severe, if necessary, not very firm and remove early. Another preventive measure, which seems to have been forgotten by many surgeons is the ligation of the angular vein at the internal canthus. This tends to prevent the ascending thrombo-phlebitis reaching the cavernous sinus. Infection and thrombosis having reached a cavernous sinus, this may be opened by the middle cranial, orbital or sphenoidal route. The internal jugular should be tied to prevent infection and thrombosis reaching the heart and lungs. Ligation of the internal carotid to put the cavernous sinus at rest has been advised but does not seem logical. The frequent incompleteness of the circle of Willis gives an immediate mortality of 25%.

Infection reaching other sinuses demands drainage and usually ligation of the internal jugular.

TREATMENT OF SCARLET FEVER*

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One of the earliest observations on scarlet fever was recorded by Rhazis, a Ninth century Arabian physician. He noted that the rash in what he supposed was measles was not always uniform. He found in some of his patients a more intense rash than in others and these frequently died whereas those exhibiting a lighter rash usually recovered. Later (1665) Sydenham definitely recorded a description of the disease and it was he who named the disease. He described the whole skin marked with small red spots, more frequent, more diffused and more red than measles. They then disappear leaving the skin covered with branny squamulae as if with powdered meal. It is doubtful if Sydenham realized the importance of the observation made.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, Nebr., May 10-12, 1927.

In our own country, scarlet fever first recorded appearance was in the village of Kingston, N. H. in 1735. Throughout that year it spread in the general locality and then to Boston. One thousand persons died, mostly children. The source was never determined. From this time it continued its spread in the following years to all the American Colonies. Since this apparently insignificant beginning in an inland New Hampshire village, almost 200 years ago, Vaughn states that we never have been without scarlet in the United States. He also makes the interesting observation "the farther south we go the less scarlet fever we have". Rogers and Castellani are authority for the statement that scarlet fever practically never exists in the tropics.

Scarlet fever has in the past been one of the most dreaded of diseases because of the inability to cope with and prevent complications and sequelae.

Little progress in treatment was made until 1895, when Marmorek made the first effort to produce anti-streptococcic serum. Since then many anti-streptococcic serums have been made.

Those of Mozer, Dochez, Zingher and several Russian and Italian workers were obtained by immunizing horses with the living streptococcus. The Dick's with the discovery of streptococcus-hemolyticus found that this streptococcus produces a toxin. They then conceived the idea that the blood serum of persons immunized with the toxin and of patients convalescent from scarlet fever contained an antitoxin that neutralized the toxin. They then immunized a horse by subcutaneous injections of sterile filtrate from broth cultures of the stains of streptococcae that had produced experimental scarlet fever. After increasing doses of toxin the horse serum was again tested and was found to neutralize strong solutions of the toxin.

It is with this antitoxin that we have been treating our cases.

Here we have a summary of 20 cases, with results. Days of temp., maximum temp., days of rash, complications and sequelae.

One cannot help but be impressed by the efficacy of the treatment. The blanching following intra-muscular injection, the fading and disappearance of the rash, the rapid fall of pulse and temperature, the comfortableness and ease of the patient, all within 24-36 hours, is very striking. The absence of severe complications and sequelae, the lack of desquamation in a large per cent of cases impresses one with the potency of the antitoxin.

While I know only too well that 20 cases is not sufficient to form any scientific proof, yet one cannot help but measure and evaluate the efficacy of the treatment in his own opinion. I know that I cannot show such results with 20 cases when the antitoxin has not been used.

These cases are all under six years with one exception and this case was 9 years old.

In this series we were fortunate in seeing these cases on the first day of the rash and apparently this has a significance on results obtained.

Average days of rash was 2.5 days, scaling in 10 cases or 50 per cent, average days of temperature was 5.5, this is including complications or and sequelae of scarlet fever.

There were no cases of immediate serum sickness. There were 5 cases or 25 per cent of late serum sickness.

Some workers advocate no antitoxin in mild cases, stating that the serum sickness is worse than the disease. Many doubt the wisdom of such workers for one never knows when a mild case will suddenly become worse and develop complications and sequelae. It is much easier to battle the serum sickness than complications and sequelae.

Three cases or 15 per cent showed otitis media, but cleared up without a surgical mastoid. No cases of mastoiditis.

One case, or 5 per cent, showed a nephritis, but cleared up within a few weeks.

One case, or 5 per cent, showed up with a pyelitis. This was a stirring up of former trouble.

Some authors state that the heart is never affected. This statement is too strong as I recently saw a post mortem on a case where the heart showed pericarditis with effusion and marked adhesions.

After scanning the literature and with such brief reports as this may be it would seem that scarlet fever antitoxin prepared either by the Dick or Dochez or a method of combining the two seems to be quite firmly established.

I think I can say that it will be but a short time until scarlet fever antitoxin will be as universally used as diphtheria antitoxin.

I think every case of scarlet fever should be treated with scarlet fever antitoxin unless contra indicated by a history of asthma, hay-fever, eczema or previous serum sickness. If necessary these cases should be desensitized before giving antitoxin. If immediate reactions, we give adrenalin chloride ½ cc to 1 cc every 15 to 30 minutes until relieved.

20 CASES OF SCARLET FEVER TREATED WITH ANTITOXIN—AND RESULTS

Case No.	Day of Rash	Total Days Rash	Scaling	Days of Tem.	Max Tem.	Serum Imme.	React. Late.	Complications							
								Ea.	Gld.	Mas.	Sin.	Ne.	Py.	Hea.	Oth.
1815	First	4	0	5	103.4	0	1pl.	0	0	0	0	0	0	0	0
4022	First	3	0	3	102.6	0	0	0	2pl.	0	0	1alb.	0	0	0
4022a	First	3	0	3	101	0	0	0	0	0	0	0	0	0	0
4040	First	2	1pl.	9	103	0	1pl.	0	2pl.	0	0	0	1	0	0
4040a	First	2	1pl.	10	103.4	0	1pl.	0	2pl.	0	0	0	0	0	0
2204	First	2	0	2	101.5	0	0	0	0	0	0	0	0	0	0
1026	First	1	0	5	101.6	0	0	0	0	0	0	0	0	0	0
3669	First	2	0	3	103.2	0	0	0	0	0	0	0	0	0	0
1952	First	4	1pl.	9	103.6	0	0	2pl.	2pl.	0	2pl.	0	0	0	0
1952a	First	5	1pl.	3	103	0	0	2pl.	2pl.	0	2pl.	0	0	0	0
3066	First	2	0	2	101	0	0	0	0	0	0	0	0	0	0
58	First	4	1pl.	2	100.5	0	0	0	0	0	0	0	0	0	0
543	First	1	2pl.	9	103.5	0	1pl.	2pl.	2pl.	0	0	0	0	0	0
246	First	2	0	2	103.5	0	2pl.	0	0	0	0	0	0	0	0
1519	First	3	2pl.	1	101	0	0	0	0	0	0	0	0	0	0
1519a	First	6	2pl.	15	105	0	0	0	2pl.	0	0	0	0	0	0
2958	First	1	0	1	100	0	0	0	0	0	0	0	0	0	0
2101	First	2	0	7	101	0	0	0	2pl.	0	0	0	0	0	0
1549	First	3	1pl.	3	104	0	0	0	2pl.	0	0	0	0	0	0
1549a	First	3	1pl.	17	101	0	0	0	2pl.	0	0	0	0	0	0

SCARLET FEVER

			Equivalent Volume Dosages of Antitoxin of different potencies.	
Clinical Severity	Age	Units of Antitoxin	Potency: sink test doses toxin neutralized per c.c.	Dosage in c.c.
Mild and Moderate	Children	3,000 to 4,000 units	10,000	30 to 40 c.c.
			20,000	15 to 20 c.c.
			40,000	7.5 to 10 c.c.
Mild and Moderate	Adults	4,000 units	10,000	40 c.c.
			20,000	20 c.c.
			40,000	10 c.c.
Severe	Children	4,000 to 6,000 units	10,000	40 to 60 c.c.
			20,000	20 to 30 c.c.
			40,000	10 to 15 c.c.
Severe	Adults	6,000 to 8,000 units	10,000	60 to 80 c.c.
			20,000	30 to 40 c.c.
			40,000	15 to 20 c.c.
Extremely Severe	Children	6,000 to 8,000 units	10,000	60 to 80 c.c.
			20,000	30 to 40 c.c.
			40,000	15 to 20 c.c.
Extremely Severe	Adults	8,000 to 12,000 units	10,000	80 to 120 c.c.
			20,000	40 to 60 c.c.
			40,000	20 to 30 c.c.

1 unit—The amount of antitoxin required to neutralize 100 skin test doses of toxin.

As a routine the giving of 300,000 skin test doses—the dose should be sufficient to establish a considerable excess of antitoxin in the blood of the patient at as early a date as possible.

The amount should vary with severity of the disease, the character and extent of the process, the size and age of patient.

Blake and Trask in order to determine the proper dose as accurately as possible have determined the amounts of toxin and antitoxin in the blood before and after and at intervals after treatment in a series of scarlet fever patients of varying ages and degree of severity treated intra-muscularly with varying amounts of antitoxin and have connected these observations with the therapeutic results and on the basis of these results recommend the dosage shown in the following table.

The ideal treatment, of course, is immunization, same as with diphtheria toxin-antitoxin. This however is still in the experimental stage. The scarlet fever committee recommends 5 injections of 500, 1500, 5,000, 15,000, and 20,000 skin test doses of toxin at intervals of a week as a minimum.

My opinion is that the prophylactic and curative treatment of scarlet fever will be used as universally as in diphtheria in a very few years.

REFERENCES

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Jr. A. M. A., May 16, 1925, P. 1477.

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Jr. A. M. A., Apr. 19, 1924, P. 1260.

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Abts. Pediatrics—Vol. 4-6-7.

DISCUSSION

FLOYD CLARKE, M. D., (Omaha): I think this paper is very apropos. I must say to the man who is attending children and to the general practitioner it is a source of great satisfaction to say, "We have something to offer in the way of treatment for your scarlet fever." We certainly have.

Of course, we must take into consideration this last epidemic of scarlet fever has been fairly mild, so we cannot definitely state whether the antitoxin will be as useful in our future epidemics of scarlet fever. Scarlet fever runs in waves. It has a mild wave and then it is apt to run a high mortality in the year following. One can administer the antitoxin very early in the disease and get decided benefits from its use.

I think the Dicks deserve all credit for the discovery of this serum, and that their serum should be used. I personally have advocated the use of Dicks' serum. We medical men should at least give them credit. They are western people connected with the McCormick Hospital for Infectious Diseases in Chicago. Dochez is an eastern man. What cases I have seen personally have not advanced as nicely with the Dochez serum as with the Dicks'.

Dr. Wiedman's cases agree closely with the cases I have had in personal practice. Administer the serum early and the complications are less, the fever goes down, and things get along splendidly.

H. B. HAMILTON, M. D., (Omaha): I am very enthusiastic over the administration of the antitoxin as a therapeutic measure. The first case was one from............... I happened to know that the epidemic there was severe. That was the most severe case I have treated. I learned afterward the little girl was one whom I had treated some years ago for diabetes insipidus. The nurse called me and said, "I do not believe she will make it." But she did under the administration of the serum. She was desperately ill, but recovered.

The immunizing of those exposed, I am not using. The reactions are severe, and while I have not personally had it happen, I have heard of cases where before the child who had scarlet fever was released, the others came down. The immunity is not of sufficient duration to protect them. A few weeks ago one of twins had scarlet fever. There were seven other children. I did not want to give the immunizing serum. I have not very much confidence in it. So I gave a single dose of Larson's oleate. I was quite gratified none of the others acquired it.

While making visits to that family, they told me of another family with five children, one of whom had scarlet fever. They gave immunizing doses. By the time the first had recovered, the second came down. When it recovered, the third came down, and so on until all five had scarlet fever, and they were in quarantine thirteen weeks. That is only hearsay. They believed it was reliable information. The reactions are as severe from the immunizing dose as from the therapeutic, in my experience.

The time you are glad you have given the antitoxin is, when you see the temperature drop the second day to almost normal and you have fewer complications. The time you are disgusted is when you get urticaria, which is quite severe and annoying.

The use of the serum I think is a great advance in the treatment of scarlet fever.

JOHN B. POTTS, M. D., (Omaha): This winter we had in the Clarkson Hospital, one day, three patients come down with scarlet fever. There was an adult and two children. They were in three parts of the hospital, so that some one must have brought it there. The adult happened to be a patient of mine who had a recent ethmoid operation. He was very sick with a temperature between 104 and 105 degrees. The interesting part of the report is Dr. Niehaus, the neurologist, took care of the hospital and gave the Dicks' treatment to the three who had the disease and the temperatures dropped.

I was worried about this man. While he was very sick, within twenty-four hours the temperature dropped to about normal and he made an uncomplicated recovery.

Every nurse and patient and doctor was tested as to whether he or she was susceptible to scarlet fever. Those susceptible were immunized. We did not have another case of scarlet fever in the hospital. Those of you who have been through scarlet fever epidemics in hospitals know what a remarkable feat that is.

DR. WIEDMAN: I want to ask Dr. Potts if this might not be a circulating case and he may have been a carrier?

DR. POTTS: Three cases came down and none had been exposed to the adult. They were on different floors.

DR. WIEDMAN: We had two at the Lincoln General with tonsils out, and the next morning they broke out with scarlet fever. Were they in the incubation period or was it surgical scarlet fever?

DR. POTTS: This man's was not an active.

DR. WIEDMAN, (closing): It is a lamentable fact we do not have a contagious hospital with every medical school. We have none in the state. I hope some day we will have a Dean of the University in sympathy with our medical schools and in sympathy with the medical hospital, and get some local scientific results on these things.

It certainly is a great pleasure to be able to go into a home and treat a case of scarlet fever, as Dr. Clarke has said, and tell the parents pretty definitely what you will do. It is almost as sure as the surgeon coming and treating an appendix and saying the patient will be cured afterwards.

As to the preventive measures, they are still in the experimental stage. We have one thing in favor of the treatment, as Dr. Hamilton has said. Usually in scarlet fever, one attack confers immunity. That is not true in diphtheria.

If we have a specific—and I think we have in scarlet fever antitoxin—and have a case of scarlet fever, why not isolate the patients and treat them? If we have a specific and no complications, that patient is immune for the rest of his life. If we give him a prophylactic dose and he comes in contact again and develops scarlet fever, you are quarantining your family again.

I came one night to this hotel and found three children in one room, and two with scarlet fever. I treated the two and the baby did not develop it, again proving what we see in the laboratory—that nursing babies do not develop scarlet fever.

PROCEEDINGS, ANNUAL MEETING

HOUSE OF DELEGATES: FIRST SESSION

Lincoln Hotel, Lincoln, Nebraska, Tuesday, May 10, 1927. 1 p. m.

The House of Delegates was called to order by President H. E. Potter. Roll call by Secretary Adams showed 53 members present.

Then followed the regular order of business.

Motion made by Dr. Tornholm that the reading of the minutes of the 1926 meeting be dispensed with. Seconded and carried.

Motion made that Dr. Andrew Harvey of Fremont serve as a delegate. Seconded and carried.

Nominees for the office of president pro tem were called for. Dr. Bryson was nominated as president pro tem.

Motion made by Dr. Selby that the nominations be closed and that Dr. Bryson be declared unanimous choice. Seconded and carried.

The report of the Council was called for.

Motion made that the reading of the report of the Council be dispensed with and approved as published. Seconded and carried.

The Program Committee report was called for.

Motion made that the reading of the Program Committee report be dispensed with. Seconded and carried.

Motion made that the reading of the secretary's report be dispensed with, and approved as published. Seconded and carried.

The report of the Public Policy and Legislation Committee was called for. Dr. Bailey read his report.

Motion made that a rising vote of appreciation be taken for Dr. Bailey and Dr. Hohlen, and for the Campaign and Legislative Committees. Seconded and carried.

Dr. Hohlen asked that his report be read after Dr. Bailey's report.

Dr. Hohlen read the report of the Campaign Committee.

Motion made that the Public Policy and Legislation Committee report and the Campaign Committee report be accepted and the committees complimented for their faithful work. Seconded and carried.

The Sub-Committee report was called for, and read by Secretary Adams.

Motion made that the Sub-Committee report be received and referred to the Council. Seconded and carried.

Report of the Council on Medical Education was called for and read by Dr. Heagey.

Motion made that the report of the Council on Medical Education be accepted and referred to the Council.

The report of the Committee on Journal and Publication was called for and read by Dr. Long.

Motion made that this report be accepted and referred to the Council with special appreciation to Dr. Long. Seconded and carried.

The Insurance Committee report was called for. Dr. Selby asked that the Insurance Committee report be held over and read at tomorrow's session. The request was granted, unanimously.

The Medico-Legal Defense Committee report was called for. Dr. Adams, secretary, read this report.

Motion made that the Medico-Legal Defense Committee report be accepted and referred to the Council. Seconded and carried.

The Public Activities Committee report was called for and given by Dr. Roeder. (Dr. Roeder explains the duties of the Activities Committee.)

Motion made that the Public Activities Committee report be accepted and referred to the Council. Seconded and carried.

Dr. Overgaard read the Necrology list for 1926 and 1927. The members remained standing while this list was being read.

Motion made that a page be set aside in the Journal as a memorial page for these doctors. Seconded and carried.

Motion made that a message or regret be sent to Dr. A. S. von Mansfelde because he was not able to attend the meeting Seconded and carried.

New business was called for. Dr. Heagey read a paper from the Nebraska State Tuberculosis Association saying that they were very desirous of giving a $50.00 prize to the best exhibit at the 1928 meeting.

Motion made that this be referred to the Council. Seconded and carried.

A recess was allowed for the selection of the Committee on Nominations. Those chosen were as follows:

1st district, Floyd Clarke.
2nd district, K. S. J. Hohlen.
3rd district, E. R. Hays.
4th district, J. D. McCarthy.
5th district, P. H. McGowan.
6th district, J. M. Woodard.
7th district, J. Bixby.
8th district, Open.
9th district, W. J. Arrasmith.
10th district, Dr. J. M. Willis.
11th district, Dr. C. A. Selby (appointed by chair).
12th district, A. L. Miller.

Motion made that the House of Delegates meet at 12:30 p. m. instead of at 1 o'clock. Seconded and carried.

Dr. Hohlen suggested that the Nominating Committee get together after this meeting and arrange for their future meeting.

Motion made to adjourn. Seconded and carried.

HOUSE OF DELEGATES: SECOND SESSION

Lincoln Hotel, Lincoln, Nebraska, Wednesday, May 11, 1927, 12:30 p. m.

Meeting was called to order by the President, Dr. H. E. Potter. Roll call by Secretary Adams showed 52 members present.

Motion made that Dr. Andrew Harvey be allowed to represent Dodge County. Seconded and carried.

Motion made that Dr. W. G. Pugsley be allowed to represent Scottsbluff County. Seconded and carried.

Motion made that Dr. R. Decker be allowed to represent Thayer County. Seconded and carried.

Dr. Adams read the minutes of the first session of the House of Delegates. These were approved as read.

Dr. Adams read the minutes of the first session of the Council. Dr. Fouts of Omaha objected to their approval as nothing had been done with the Legislative Committee's recommendation that a committee of the State Medical Association be appointed to confer with the committee of the State Manufacturers Association.

Ruling was made that this clause of the Legislative Committee's report be referred back to the Council.

Motion made that the minutes of the Councilor meeting be approved. Seconded and carried.

Dr. Potter appointed Drs. Mayhew, Selby and Nielsen as the committee to draw up a suitable letter to Mr. R. F. Stout and members of the Legislature mentioned in Dr. Hohlen's report.

Motion made that the report of the Committee on Care and Prevention of Contagious Diseases be referred to the Council. Seconded and carried.

Dr. Selby read the Insurance Committee's report.

Motion made that the Insurance Committee report be accepted and referred to the Council. Seconded and carried.

New Business was called for.

Motion made that Drs. A. W. Edmiston, E. V. Newmann of Omaha, Dr. G. O. Remy, Ainsworth, and G. H. Line, Central City be referred to the Council for Honorary Membership. Seconded and carried.

Unfinished business:

Dr. Adams read the Amendment to the Constitution as given by Dr. McCarthy at the 1926 meeting.

Motion made that we reject this proposed amendment. Seconded and carried.

Dr. Adams read the Amendment to the Constitution and By-Laws as given by Dr. Long at the 1926 meeting.

Motion made that this proposed amendment be adopted. Seconded and carried.

Dr. Bryson read the announcements.

Announcement was made that the Nominating Committee would begin session at 4:30 in the English Room.

Motion made that we adjourn. Seconded and carried.

HOUSE OF DELEGATES: THIRD SESSION

Lincoln Hotel, Lincoln, Nebraska, May 12, 1927, 8 a. m.

The meeting was called to order by the President, H. E. Potter. Roll call by Secretary Adams showed 54 members present.

The minutes of the second session of the House of Delegates were read by Dr. Adams and approved as read.

The minutes of the second and third sessions of the Council were read by Dr. Adams and approved as read.

Motion made that Dr. Powell be allowed to take Dr. Duncan's place for the Omaha-Douglas County. Seconded and carried.

The next order of business being the election of officers for the year 1928. The report of the Nominating Committee was called for. The Nominating Committee made the following report:

For President—Dr. B. R. McGrath, Grand Island; Dr. T. J. Rubelman, Tecumseh; Dr. Homer Davis, Genoa.

For Vice President—Dr. C. A. Selby, North Platte; Dr. A. P. Overgaard, Omaha.

For Secretary—Dr. R. B. Adams, Lincoln.

For Delegate to A. M. A.—Dr. A. D. Dunn, Omaha.

Alternate to A. M. A.—B. F. Bailey, Lincoln.

Delegate to Council of Medical Education A. M. A. —Dr. J. S. Welch, Lincoln.

Public Activitics Committee—Dr. C. C. Tomlinson, Omaha.

Medico-Legal Defense—Dr. R. W. Fouts, Omaha.

Member Publication Committee: Dr. F. A. Long, Madison.

Campaign Committce—Dr. K. S. J. Hohlen, Lincoln.

Councilors—1st district, Dr. A. P. Overgaard, Omaha; 2nd district, Dr. H. J. Lehnhoff, Lincoln; 3rd district, Dr. C. P. Fordyce, Falls City; 4th district, Dr. A. E. Cook, Randolph; 10th district, Dr. L. W. Rork, Hastings.

Respectfully submitted,
J. Bixby, Chairman,
J. D. McCarthy, Secretary.

The House of Delegates proceeded to cast ballot for the three nominees for president.

Dr. McGrath received 38 votes, Dr. Davis 13, and Dr.. Rubleman 2. Dr. McGrath receiving the majority, was declared elected President of the Nebraska State Medical Association.

Election for Vice-Presidents was next in order. There being only two nominees for Vice-Presidents it was moved and seconded that a unanimous ballot be cast for Dr. C. A. Selby, North Platte, and Dr. A. P. Overgaard, Omaha. Carried. The secretary cast the unanimous ballot of the House of Delegates for Dr. C. A. Selby and Dr. A. P. Overgaard for Vice-Presidents.

The next in order was Secretary-Treasurer. Dr. F. A. Long, Madison, was nominated from the floor so a ballot was cast for the two nominees, Dr. R. B. Adams, and Dr. F. A. Long.

Dr. Adams received 29 votes and Dr. Long 25.

Motion made that the vote for Dr. R. B. Adams, Lincoln, for Secretary-Treasurer of the Nebraska State Medical Association be made unanimous. Seconded and carried.

There being only one nominee for Delegate to the A. M. A. it was moved and seconded that the secretary cast a unanimous ballot for Dr. A. D. Dunn, Omaha. Carried. The secretary cast the unanimous ballot of the House of Delegates for Dr. A. D. Dunn, Omaha, as Delegate to the A. M. A.

There being only one nominee for Alternate to the A. M. A. it was moved and carried that the secretary cast a unanimous ballot for Dr. B. F. Bailey. The secretary cast the unanimous ballot of the House of Delegates for Dr. B. F. Bailey, Lincoln, as Alternate to the A. M. A.

Inasmuch as there was only one nominee for Delegate to Council of Medical Education it was moved that a unanimous ballot be cast by the secretary for Dr. J. S. Welch, Lincoln. Carried. The secretary cast the unanimous ballot of the House of Delegates for Dr. J. S. Welch, Lincoln.

There being only one nominee for the Public Activities Committee, it was moved, seconded and carried that the secretary cast a unanimous ballot for Dr. C. C. Tomlinson, Omaha. The secretary cast the unanimous ballot of the House of Delegates for Dr. C. C. Tomlinson, Omaha.

There being only one nominee for the Medico-Legal Defense Committee, it was moved, seconded and carried that a unanimous ballot be cast for Dr. R. W. Fouts, Omaha, to fill the unexpired and also the full term as member of the Medico-Legal Defense Committee. The secretary cast the unanimous ballot of the House of Delegates for Dr. R. W. Fouts, Omaha.

There being only one nominee for the Member Publication Committee, it was moved, seconded and carried that a unanimous ballot be cast for Dr. F. A. Long. The secretary cast the unanimous ballot of the House of Delegates for Dr. F. A. Long, Madison.

Inasmuch as there was only one nominee for the Campaign Committee, it was moved, seconded and carried that the secretary cast the unanimous ballot for Dr. K. S. J. Hohlen. The secretary cast the unanimous ballot of the House of Delegates for Dr. K. S. J. Hohlen, Lincoln.

There being only one nominee for Councilor First District, one nominee for Councilor Second District, one nominee for Councilor Third District, one nominee for Councilor Fourth District, and one nominee for Councilor Tenth District, it was moved, seconded and carried that the secretary cast the unanimous ballot for Dr. A. P. Overgaard, Councilor First District; Dr. H. J. Lehnhoff, Councilor Second District; Dr. C. P. Fordyce, Councilor Third

District; Dr. A. E. Cook, Councilor Fourth District; Dr. L. W. Rork, Councilor Tenth District. The secretary cast the unanimous ballot of the House of Delegates for Dr. A. P. Overgaard, Omaha, Councilor First District; Dr. H. J. Lehnhoff, Lincoln, Councilor Second District; Dr. C. P. Fordyce, Falls City, Councilor Third District; Dr. A. E. Cook, Randolph, Councilor Fourth District; Dr. L. W. Rork, Hastings, Councilor Tenth District.

A committee consisting of Dr. M. S. Moore and Dr. J. V. Beghtol was appointed by Dr. Potter to get Dr. B. R. McGrath, the newly elected president, and bring him before the House of Delegates. Dr. McGrath gave a short address of appreciation to the House.

Dr. Nielsen read the resolution submitted by the committee appointed to carry out the recommendation embodied in Dr. Hohlen's report.

Motion made that this resolution be adopted. Seconded and carried.

Motion made that a vote of thanks be sent to the Nebraska Tuberculosis Association for providing Dr. Matson on our program. Seconded and carried.

Motion made that the Secretary send greetings to the Iowa Medical Society. Seconded and carried.

The next order of business was choosing a place for the next year. Dr. Potter read invitations from Grand Island and Omaha. Dr. Beghtol gave a personal invitation to the Association to hold their meeting in Hastings. A vote by ballot was taken and Grand Island received 8 votes, Hastings 22, and Omaha 22. Grand Island withdrew her invitation and another ballot was taken. The result was: Hastings 31, Omaha 22.

Motion was made that the vote for Hastings be made unanimous. Seconded and carried.

Motion made that a resolution be drafted and sent to the Lancaster Medical Society for the splendid program arranged for this occasion. Seconded and carried.

Dr. Potter appointed Dr. Morris Nielsen and Dr. Adams to draw up this resolution.

Motion made to adjourn. Seconded and carried.

COUNCILOR MEETING: FIRST SESSION

Lincoln Hotel, Lincoln, Nebraska, Tuesday, May 10, 1927. 2 p. m.

Members present were: Drs. Overgaard, Cook, Tornholm, Bryson, Preston, Potter, Selby, Rork and Plehn.

Motion made that we recommend the report of the Committee on Medical Education be received and published in our minutes. Seconded and carried.

Motion made that we recommend the Journal Committe report be accepted and placed on file. Seconded and carried.

Motion made that we recommend the Public Activities Committee report be accepted and placed on file. Seconded and carried.

Motion made that we recommend the House of Delegates endorse the plan offered by the Nebraska State Tuberculosis Association. Seconded and carried.

Recommendation made that Dr. Wherry's report as Librarian, be received and placed on file. Seconded and carried.

Motion made that we recommend the Legislative Committee report be accepted and published in the Journal. Seconded and carried.

Motion made that we recommend the Sub-Committee report be accepted and placed on file. Seconded and carried.

Motion made that we recommend the Campaign Committee report be accepted and the first portion published in the Journal. Seconded and carried.

Motion made that we recommend that the president comply with Dr. Hohlen's request and appoint a committee to draw a suitable letter to Mr. R. F. Stout and members of the Legislature suggested by Dr. Hohlen in his report. Seconded and carried.

Motion made that we recommend the confidential report of Dr. Hohlen be accepted and placed on file, and that a check for $68.66 be drawn in favor of the chairman to cover the deficit incurred by that committee. Seconded and carried.

The Constitutional Revision Committee's report was read by Dr. Overgaard. Discussion followed.

Recommendation made that Section 4, Article 8, be revised to read: "The President elect shall assume office as President elect immediately on his election and shall become President on the first day of the next annual meeting. Seconded and carried.

Motion made that we recommend the Constitutional Revision Committee report be accepted and take the regular course. Seconded and carried.

Motion made that the Council meet at 9:30 a. m. Seconded and carried.

Motion made that the Council adjourn until tomorrow morning at 9:30 a. m. Seconded and carried.

COUNCILOR MEETING: SECOND SESSION

Lincoln Hotel, Lincoln, Nebraska, Wednesday, May 11, 1927. 9:30 a. m.

Meeting was called to order. Those present were: Drs. Selby, Plehn, Overgaard, Bryson, Fordyce, Tornholm, Cook, Lehnhoff, Preston, Rork.

It was moved to recommend the appropriation to the House of Delegates for 1927 as follows:

Journal Fund, per member	$ 1.50
Councilor Expense	360.00
Campaign Committee	500.00
Secretary-Treasurer	800.00
Secretary's Salary	600.00
Salary of Chairman of Defense Committee	600 00
Expense Chairman of Defense Committee	200.00
Official reporter for meeting	150.00
Public Activities Committee	1,000.00

Railroad fare to delegates to A. M. A. and delegate to Council on Medical Education. Also program talent.

Seconded and carried.

Motion made to adjourn. Seconded and carried.

COUNCILOR MEETING: THIRD SESSION

Lincoln Hotel, Lincoln, Nebraska, Wednesday, May 11, 1927. 2 p. m.

Meeting was called to order. Those present were: Drs. Overgaard, Selby, Plehn, Rork, Cook, Bryson, Tornholm, Preston, Fordyce.

Motion made that we recommend to the House of Delegates a committee of three consisting of Dr. B. F. Bailey, Lincoln, chairman; Dr. R. W. Fouts, Omaha, and Dr. K. S. J. Hohlen, Lincoln, as representatives of the Nebraska State Medical Association, to confer with the Manufacturers Association as was recommended by Dr. Bailey in his report. Seconded and carried.

Motion made that we recommend that the House of Delegates appoint a State Fair Exhibit Committee, the personnel of this committee to consist of Dr. E. R. Hays, Falls City, Chairman; Dr. H. J. Lehnhoff, Lincoln, and Dr. F. B. Young, Gering, and also recommend that an appropriation of $500.00 be allowed for this committee. Seconded and carried.

Motion made that the Insurance Committee report be referred to the House of Delegates with the recommendation that it be accepted and placed on file and a copy be sent to each county secretary. Seconded and carried.

Motion made that we recommend the report of the Committee on Care and Prevention of Contagious Diseases be adopted and published in the regular form. Seconded and carried.

The Council recommends that Drs. Edmiston, Newman, Remy and Line be elected to honorary membership.

Motion made to adjourn. Seconded and carried.

REPORT OF THE COUNCILORS' COMMITTEE ON REVISION OF THE CONSTITUTION

To the Councilors, Nebraska State Medical Association:

At your annual meeting, January, 1927, you designated the following committee to consider the advisability of revising the Constitution and By-Laws as suggested by the Model Constitution published by the American Medical Association: F. A. Long, chairman; Palmer Findley, Morris Nielsen and H. J. Lehnhoff, the most recent presidents, and R. B. Adams, secretary, and H. E. Potter, presidents ex-officio. All were present at the meeting of the committee, in Omaha, April 25, except Dr. H. E. Potter, who, by mischance, had not been notified.

It was the unanimous opinion of those present that the Constitution and By-Laws under which the association is operating is in most respects quite satisfactory.

The committee, however, saw fit to suggest the following changes, believing greater efficiency would result by their adoption:

ARTICLE II.—PURPOSE

The purposes of this Association are to promote the science and art of medicine, the protection of public health, and the betterment of the medical profession; and to unite with similar organizations in other States and Territories of the United States to form the American Medical Association.

ARTICLE VIII.—OFFICERS

Section 1. The officers of this Association shall be President, a President-Elect, two Vice Presidents, a Secretary-Treasurer and twelve Councilors.

Section 2. The President-Elect shall assume office as President-Elect immediately on his election and shall become President on the first day of the next annual meeting.

The Secretary-Treasurer and twelve Councilors shall be elected for terms of three years each, the Councilors being divided into classes so that four shall be elected each year. All of these officers shall serve until their successors are elected.

Section 3. The officers of this Association, except Secretary-Treasurer who shall be elected by the Council, shall be elected by the House of Delegates, etc.

BY-LAWS

CHAPTER VI.—DUTIES OF OFFICERS

Section 1. Add at the end of Section 1, the following:

He (the President) shall be a member of the Council for a period of one year immediately succeeding his term of office. He shall be allowed one hundred dollars for office and traveling expenses during his term of President.

Section 1-a. The President-Elect shall immediately after his election, become a member of the Council ex-officio. He shall, not later than October first immediately following his election, appoint a Committee on Scientific Program for the following year.

CHAPTER VIII.—COUNCIL

Add Section 3-a and Section 3-b and Section 7 and Section 8 and Section 9, as follows:

Section 3-a. Charters shall be issued to county societies only on approval of the Council, and shall be signed by the President and Secretary of this Association. Upon the recommendation of the Council, the House of Delegates may revoke the charter of any component society whose actions are in conflict with the letter or spirit of this Constitution and By-Laws.

Section 3-b. In sparsely settled sections the Council shall have authority to organize the physicians of two or more counties into societies, to be suitably designed so as to distinguish them from district societies, and these societies, when organized and chartered, shall be entitled to all rights and privileges provided for component societies until such counties shall be organized separately.

Section 7. The Council may employ an Executive Secretary, who need not be a physician nor a member of the Association.

Section 8. The salaries of all employees of the Association shall be fixed by the Council.

Section 9. The Council shall provide such headquarters for the Association as may be required to conduct its business properly.

CHAPTER VIII.—COMMITTEES

Section 1. The Standing Committees shall be as follows:

A Committee on Scientific Program, to be appointed by the President-Elect.

A Committee on Public Policy and Legislation to be appointed by the President.

A Committee on Journal and Publication.

A Committee on Nominations.

A Committee on Medico-Legal Defense, to be elected by the Council.

A Committee on Arrangements.

A Campaign Committee.

A Public Activities Committee.

Also, such other committees as may be necessary. Such committees shall be elected by the House of Delegates, unless otherwise provided.

Section IX. Following the sentence—

The Committee on Public Activities shall consist of five memebrs.

add

They shall perfect their own organization.

F. A. Long, Chairman.

REPORT OF DELEGATE TO CONGRESS ON MEDICAL EDUCATION, MEDICAL LICENSURE AND HOSPITALS

The Annual Congress on Medical Education, Medical Licensure and Hospitals was held in the Palmer House in Chicago, February 14th, 15th and 16th. The meetings were most delightful, and the meeting place commodious and convenient.

The program was composed of men who were especially interested in medical education and hospitals. The general tone of the meeting throughout was directed toward methods for simplifying medical education and making more practical the hospital work of the undergraduate and intern.

Dr. A. D. Bevan, in talking on the need of teaching medical ethics, dwelt for some time on prescriptions for alcohol and whiskey. He said that 99% of all prescriptions for these drugs were in reality bootlegging prescriptions, and that in a large service at the Presbyterian Hospital in Chicago they had not seen a single case where alcohol and whiskey were necessary during the past year.

He felt that the patient should have the right to consult any doctor at any time, and that so long as the practitioner was honest with his patient he would have no desire to prevent these consultations.

Dr. Charles F. Martin, dean of McGill University, Montreal, in talking of the trend of medical education, advocated the state control of medical policies, university control of medical details and the American Medical Association control of enforcements of standards.

Former President Dr. Ray Lyman Wilbur was quite radical in his recommendations. He strongly advocated that a medical course should consist of three clinical years with a month only between each year, that there should be numerous free lectures without examination, and that the basic sciences, such as anatomy, etc., should not be a part of the medical school, but belong to the pre-medical work.

Dr. Evarts Graham, of Washington University, St. Louis, was particularly interested in internships and residencies that provide intensive training of the men, attention being paid to details, and ability to follow a patient through from beginning to end.

Dr. William J. Mayo, in talking on the medical education of the general practitioner, was also in favor of the three-year continuous course and the encouragement of the medical student to enter his medical school earlier, as it had been his experience that the earlier the men graduated the more successful they were in the practice of their specialties. Specialties should be a matter of graduate preparation rather than a part of the general medical curriculum.

Dr. Willard C. Rappleye, Director of Study, New Haven, mentioned some of the facts that had been brought out in the preliminary report of the commission on medical education. The average practitioner's work was 55% office, 35% home and 10% hospital. He also advocated the shortening of the medical course and brought out many things that are embodied in this report.

Dr. F. C. McLean, Professor of Medicine, University of Chicago, asked for the application of methods in clinical work that were scientific and accurate as those in the physiology. He felt that quick thinking as a routine could easily be acquired under this basis.

Dr. F. B. Granger, from Boston City Hospital, in talking on physical therapy as a hospital department, gave a very worthy discussion of the problem of physio-therapy, and the paper was very ably discussed by many men from different parts of the country. His attitude was that of a man who had a most complete hospital equipment for physical therapeutic measures, so that it was difficult to apply his ideas to a practitioner. It was brought out that in the State of New York at the present time there is a law which prevents a physio-therapist, not an M. D., from administering treatments save on prescription of a licensed physician. This often goes so far as to designate what the type of treatment should be. The physio-therapists, as well as medical men, brought out the fact that most practitioners are not competent to decide the type of physical therapy, or the method, and that this law, therefore, works a hardship in many cases. It was generally conceded that the best basis on which to work was for the physician to send his patient to a physio-therapist after some discussion with him as to what the condition was and what recommendations the physio-therapist had to make.

Dr. G. E. Follansbee, St. Alexis Hospital, Cleveland, spoke on the duty of the hospital staff to the intern, and emphasized the fact that they have a serious task on their hands, since the intern has given up valuable time to complete his education, and it behooves the staff to see that this education is given to him.

Dr. N. P. Colwell, Secretary of the Council on Medical Education, spoke on the function of the hospital in medical education. He said there were not enough interns for hospitals, and that the main function of the hospital was service to the patient, training of men and women, and adding to medical knowledge. He felt that the hospital was a place for higher training now rather than a place to round out training. He mentioned the fact that there are 575 approved hospitals now in the United States.

Dr. C. A. Gordon, Chairman of the Committee on Public Health of the Medical Society of the State of New York, gave us some very interesting accounts as to the efforts of the New York State Medical Society in arranging courses in obstetrics, pediatrics and basal metabolism in various county hospitals. Clinical lectures are often given from five to six o'clock at night, and the county societies are able to organize the material for these lectures and clinics. It is an idea that is well worth our attention.

Dr. L. B. Wilson, of the Mayo Clinic, spoke of graduate medical education in Europe, a talk which was of interest to anybody who was contemplating work abroad. He said that medical students were welcome now everywhere except in Russia. He spoke particularly of the advantages of study in Europe from the standpoint of other things in addition to medicine, and from the great amount of autopsy material that most of these centers presented.

Dr. W. L. Bierring, of Des Moines, called the attention of the council to the increasing importance in practice of the post-graduate clinics and the large attendance that these clinics were having in different parts of the country. He suggested that it would be wise for the medical schools to take notice of this fact.

In closing it might be well to note that the trend of the meeting was toward a shorter and more condensed medical course with more practical line of subjects for the training of the practitioner; (2) that the hospital and the post-graduate schools should be used for the training of doctors in the specialties; (3) that there is a determined and organized effort being made to carry clinics and instruction into all parts of the United States, to put the opportunity for improvement into the hands of every practitioner wherever he may be located.

—F. W. Heagey, M. D.

THE COMMITTEE OF THE NEBRASKA MEDICAL SOCIETY ON CONTAGIOUS DISEASES SUBMITS THE FOLLOWING REPORT:

Contagious diseases reported in Nebraska from January 1, 1926, to October 1, 1926:

Chickenpox	724
Diphtheria	179
German measles	22
Encephalatis Lethargica	11
Influenza	217
Measles	1348
Meningitis C. S.	10
Mumps	179
Paratyphoid fever	1
Poliomyelitis	11
Pneumonia	68
Rabies	1
Scarlet fever	1717
Septic sore throat	9
Sleeping sickness	1
Smallpox	614
Tetanus	4
Tuberculosis	205
Typhoid fever	48
Whooping cough	740
	6031

At the time this report is made up, data only for the first 9 months of the year 1926 is available. As in previous years, scarlet fever, measles, whooping cough, chickenpox and smallpox are those most frequently reported. A more general use of toxin-antitoxin would yet diminish the number of diphtheria cases. 614 reported cases of smallpox would indicate the lack of efficient vaccination. A survey of the mortality rate in different cities of the U. S. from smallpox again illustrates the varying virulence of the diseases, e. g.: Los Angeles, 1278 cases and 33 deaths; Oakland, 498 cases, no death; Minneapolis, 416 cases and 144 deaths; Indianapolis, 545 cases, no death; Omaha, 559 cases, no death. Since without warning, virulent cases may appear in any community, vaccination should not be neglected.

Attention is called to the increased facilities for the transmission of communicable diseases from one community to another by reason of the multiple means of transportation of individuals and commodities. The cooperation of the public, the profession and health agencies is needed in these matters for the safety of all.

Respectfully submitted,
H. B. Hamilton.

REPORT OF CAMPAIGN COMMITTEE

May 9, 1927.

To the President and Members of the House of Delegates, Nebraska State Medical Association:

If the report of the Chairman of the Campaign Committee would be written in full detail it would read like a modern story, full of plots and intrigue. The incidents and details are too many to be reported here, but it has been a campaign that has been full of interest. The members of this society who have not been in active touch with the legislature, do not realize to the fullest extent what has gone on behind the scenes, things that never become public. On the surface everything seems to have been serene and everything went along like clock work. In many of the members minds there were times, I am sure, that they questioned the motives or wisdom of the action of their committees dealing with Legislative matters. This was because of the above mentioned facts and that your representatives had to use their best judgment in dealing with others concerned. On the whole we had the whole-hearted support of the membership.

The undersigned chairman is indeed very glad to be able to report a most successful campaign carried out in the past legislative. Furthermore it is the first time in the history of our State Association that members of the State Legislature were our friends and willing co-workers in passing legislation for the benefit and protection of the public.

The most important piece of legislation put through by your committees was the bill known as the Basic Science Bill, S. F. 61. You all know what this relates to. It was introduced in the Senate by Senator Laughlin of Beatrice on January 17, 1927. The bill had rather a stormy career, due to opponents of the bill, but eventually it passed through the various Committees, Senate and the House.

The bill was signed by Gov. Adam McMullen at 2:45 p. m., April 18, 1927, in the presence of our President, Dr. H. E. Potter, Members of the Legislative Committee: Chairman Dr. B. F. Bailey, Dr. R. W. Fouts, Dr. J. W. Duncan, Dr. E. W. Rowe, Dr. R. B. Adams, Dr. J. M. Mayhew, Dr. Joe Bixby, Dr. J. J. Hompes, and the writer.

Other Legislative matters of interest to the members were the Compensation Bill, the Chiropractors Bill, and last but not least, Judge Frost's Codification Bill, H. R. 551. The last, the Frost Bill, was the largest bill introduced. This bill at one time was a very vicious bill. It provides for codification of the different boards by the Head of the Department of Public welfare. Providing a code of morals, annual registration, etc. This bill was thoroughly emasculated by ammendments by your Legislative Committee, after we had blocked the bill in the committee and brought the supporters of the bill to us so we could amend the bill. This bill passed both branches of the Legislature and was signed by the Governor. It was amended so that it will not conflict with S. F. 61.

In this successful year of ours we must not forget those who made it possible to carry out this program and to them we owe a vote of thanks:

1. Our Legislative Committee.
2. Our Lobbyist Mr. R. F. Stout.
3. The members of the legislature who were friendly and especially: Senators L. H. Laughlin, Beatrice; C. A. Chappell, Minden; J. W. Robbins, Omaha; W. N. Chambers, Omaha; R. J. Nibbe, Tecumseh; Clark Jeary, Lincoln; T. M. Osterman, Central City; Chas. Smrha, Milligan. Representatives Dr. A. S. Main, Loup City; Allen G. Burke, Bancroft; Victor M. Novis, Lexington; Jas. A. Rodman, Omaha; Edw. Crofoot, Omaha; R. C. VanKirk, Lincoln; Max Kier, Lincoln.
4. Gov. Adam McMullen.

The chairman of the campaign committee herewith wishes to thank all those who so loyally cooperated with him in putting this thing across and especially to the members far away from the seat of war, who by their aid made it possible to make the campaign a success. Credit must be given Dr. J. W. Duncan and Dr. R. W. Fouts of the Legislative Committee of the Omaha-Douglas County Medical Society, and the Dodge County Medical Society, for their very active support.

RECOMMENDATIONS:

1. That the chairman appoint a committee of three to draw up resolutions expressing the thanks of this Association, to Mr. R. F. Stout and to the members of the Legislature above mentioned. That the Secretary be instructed to forward a copy of these resolutions to each one above mentioned.
2. That this report be printed in the Journal.

Respectfully submitted,
K. S. J. Hohlen,
Chairman Campaign Committee.

Appended financial statement and confidential report.

REPORT OF COMMITTEE ON MEDICAL LEGISLATION

To the House of Delegates of the Nebraska State Medical Association:

During the year or more preceding this last session of the legislature the members of your Committee on Medical Legislation and Public Welfare studied as carefully as possible the best and most feasible ways of amending legislation as relating to those practicing the healing art. These studies involved the study of the activities of other states, and the studies and recommendations of the American Medical Association. Before the time of the assembling of the legislature your committee had assembled a great deal of literature on the subject. The consensus of opinion seemed to be that the action most needed now was to secure the passage of a statute which should provide for a basic education and without compliance with said statute none could be licensed to practice the healing art, a statue that should provide for so fair a basic education that no one could be accused of discrimination against any organization. The result was a determination to prepare and have introduced what has since come to be known as the Basic Science Law. This bill was prepared by a competent attorney and introduced by Senator Laughlin and was known as Senate File 61. After its preparation a meeting with Sen. Laughlin, a number of other members of the Senate, the Legislative Committee, the President of the Association, and a number of other physicians present, the bill was carefully studied and such minor changes made as seemed wise and the bill was duly introduced by Sen. Laughlin. A meeting was then held by your Legislative Committee with the Legislative Committee of the State Osteopathic Society, Dr. Young of Fremont being the chairman of said association. The bill was carefully discussed with a view to agreement between the two associations to support this bill but without a definite agreement. A few days later another meeting of these two committees was held at the Lincoln Hotel and an agreement was reached by which both associations were to support this bill, and it is just to say that the Osteopathis Committee loyally supported this bill throughout its devious course in the legislature. As you know, S. F. bill 61 finally passed first the Senate, then the House of Representatives, and the Govenor, in the presence of the members of the Legislative Committee signed the bill making it a law to take effect on July first.

We are advised from private sources and through the public press that the Chiropractors are about to attempt to secure petitions demanding a referendum on S. F. 61. This requires petitions signed by 5% of the number of voters at the last gubernatorial election. It will now be our duty as an association to prevent if possible the petitions being signed within 90 days after the close of the legislative session as this is the time allowed, or if these petitions are signed to campaign in favor of the affirmative vote in the referendum.

At other meetings of the Legislative Committee S. F. 112, known as the Compensation Bill, was discussed and it was submitted to our representative, Mr. Richard Stout who acted as registered lobbyist for the Medical Association to investigate this bill very thoroughly and your chairman was authorized to confer with the secretary of the association which was supposed to be most definitely the backer of the bill and Mr. Stout and the chairman left with the power to act. Upon investigation your committee found that this bill had very little chance of becoming a law, that those active in the introduction of it were themselves not entirely satisfied with it, but that they felt there was some unfairness in the present law and that some physicians had dealt unfairly in the matter of compensation. It was suggested by this organization that a committee of their own confer with your Legislative Committee or such committee as you shall provide, with a view to preparing for the next Legislature a bill amending the compensation act as can be agreed upon by the two committees in joint session. We believe this advisable and recommend it to the House of Delegates.

There were various other bills that needed close watching and the disposition of them was such as to be satisfactory to your committee.

House Bill 551 introduced by Judge Frost, head of the Public Welfare Department of the State, was taken under consideration at a joint meeting of the Legislative Committee with the Legislative Committee of the State Dental Association, the meeting being held at the request of the State Dental Association. The bill was very carefully read, discussed and many amendments were suggested, we feeling that we must not permit the bill to pass as it was originally prepared. The amendments suggested by this joint meeting were accepted and with them the bill was passed. Your committee recognized that there was objection on the part of a good many physicians of the state to the registration provision with the one dollar fee attached. On the other hand we are continually desiring that illegal practitioners be driven from the state. There is no possible way of keeping a complete and up-to-date list of those legally registered in the state except by annual registration and there is not sufficient money appropriated by the state to provide for the getting of evidence and prosecution of illegal offenders. It has been said that the state should provide this fund but they do not and will not, and this being true it has seemed to your committee not unreasonable that we should submit to this annual fee of one dollar to make possible the carrying out of the desire of the members of this association in the prosecution and expulsion of illegal offenders. We trust that the acceptance of this by your committee will be acceptable to the members of the association. House File 551 as amended was passed and signed by the Governor.

We believe that the passage of the Basic Science Bill is a great advance in the protection of the people from the exploits of those who without sufficient education or preparation pose as healers of the sick.

We wish to express our appreciation to the many members of the Senate and House and to the Governor for a clear conception of the aims of S. F. 61 and their loyal support of the same and for their evident growing recognition of the fact that the medical men of Nebraska are aiming to protect not themselves but the public.

Your committee wishes to express in as strong terms as is possible their appreciation of the splendid work done by Dr. Hohlen, chairman of the Campaign Committee of the Association. He gave without stint of his time and his work. He systematized the campaign as it has never been systematized before. Night or day, in season or out of season he was always at his post and too much cannot be said in commendation of his work.

We also wish to call attention to the members of the medical profession in the Senate and House and for their support of the bill and to suggest that as the Medical Association has given to it so great a responsibility in the protection of the health of the people and in the suggestion and passage of statutes that are tributary to this, it will be wise in the future if we have a fair number of our profession who will consent to stand for election as members of our legislative bodies.

The chairman of your committee wishes also to make of record the splendid loyalty of the members of the committee, the willingness of everyone to take upon himself any responsibility that was necessary, to give of his time, and his money, to attend meetings, or to make any effort to obtain results that were indicated. No chairman ever had a more loyal committee or more loyal profession to aid in the accomplishment of a task.

Respectfully submitted,
Benj. F. Bailey,
Chairman Com. Medical Legislation and Public Welfare.

REPORT OF COMMITTEE ON JOURNAL AND PUBLICATION

The detailed financial report of the Journal Fund for 1926 was published in the February Journal. A resume is here given:

Total Receipt from All Sources	$7,125.67
Total Direct Disbursements	6,997.09
Balance Jan. 1, 1927	128.58
Investments in Building and Loan Associations	$5,395.15

Advertising is somewhat easier to obtain and the financial outlook for the Journal is, therefore, hopeful. The members should always bear in mind that the advertisers help pay for the Journal and should accord them a liberal share of their patronage.

The Journal is being held down to forty pages of reading matter in each number. The copy offered the Journal from time to time, in addition to the annual meeting material is ample to keep the office supplied with the necessary material. The observant reader must notice a continuous improvement in the quality of the original matter presented. The Nebraska profession has improved very much in professional attainment within very recent years and the Journal reflects this.

It may not be out of place to state that the editor, by request, presented a paper on "The Part of the State Medical Journal in Medical Organization", before the annual conference of the secretaries and editors of constituent state medical associations, in Chicago, last November—a recognition of The Nebraska State Medical Journal.

The Publication Board asks for a continuance of the sum of $1.50 from the dues of each member as subscription to the Journal for the ensuing year.

—F. A. Long, Chairman.

HOUSE OF DELEGATES

Adams—J. V. Beghtol	p	a	a
Boone—J. E. Davis	p	p	p
Box Butte			
Buffalo—G. H. Bentz	a	a	p
Burt—R. E. Hall	a	a	a
H. W. Benson	a	a	a
Butler—J. H. Downing	p	p	p
Cass			
Cedar, Dakota, Dixon, Thurston and Wayne—John Buis	p	p	p
N. L. Hansen			
Chase, Dundy, Hayes, Hitchcock—G. Hoffmeister	p	a	a
Cheyenne-Kimball—A. L. Miller	p	p	a
Clay—W. M. Thomas	a	a	a
W. H. Gibbon	a	a	a
Colfax—P. H. McGowan	p	p	p
W. J. Kavan			
Cumings—H. W. Francis	p	p	p
Custer—J. H. Morrow	a	a	a
Dawson—F. H. Rosenberg	a	a	a
E. C. Stevenson	a	a	a
Dodge—Andrew Harvey	p	p	p
Fillmore—J. Bixby	p	p	p
A. B. Stratton			
Franklin—H. C. Smith	p	p	p
C. E. Knowles			
Furnas—R. D. Green	p	p	p
Gage—F. W. Buckley	p	p	a
C. G. Baird			
Hamilton—J. M. Woodard	p	p	a
Hall—W. J. Arrasmith	p	a	p
E. G. Johnson			
Harlan—J. N. Campbell	a	p	p
W. C. Bartlett			
Holt and Northwest—E. G. Rasch	a	a	a
F. S. Wilson	a	a	a
Howard—A. H. Holm	p	a	a
M. O. Arnold	a	a	a
Jefferson—H. E. Harvey	p	p	a
J. S. Taylor			
Johnson—A. P. Fitzsimmons	a	p	a
C. D. Barnes			
Kearney			
Keith-Perkins—H. A. Vandiver	a	a	a
F. M. Bell	a	a	a
Knox			
Lancaster—K. S. J. Hohlen	p	p	p
W. O. Colburn			
G. W. Covey	p	p	p
J. J. Hompes			
H. H. Waite	p	p	p
S. C. Clements			
Lincoln			
Madison, Stanton, Pierce and Antelope—			
Madison—E. L. Brush	a	a	a
F. X. Rudloff			
Pierce—Walter Benthock	p	p	p
L. A. Johnson			
Antelope—J. D. McCarthy	a	p	p
W. T. Craft			
Merrick			
Nance—Homer Davis	a	a	a
Nemaha—B. F. Lorance	a	a	a
S. A. Van Osdel			
Nuckolls			
Omaha-Douglas—H. B. Hamilton	p	p	p
Floyd Clarke	p	p	p
J. W. Duncan	a	a	a
E. W. Powell	a	a	p
F. W. Heagey	p	a	p
R. W. Fouts	p	p	p
J. M. Patton	p	p	p
C. C. Tomlison	p	p	p
Otoe—W. D. Gibbon	p	a	p
T. L. Weeks			
Pawnee—W. R. Boyer	p	p	a
Phelps—P. A. Sundbury	a	a	a
Rachel Long	a	a	a
Platte—J. E. Meyer	p	p	a
M. C. James			
Polk—J. C. Malster	a	a	p
Red Willow—J. M. Willis	p	p	p
W. D. MacKechnie			
Richardson—E. R. Hays	p	p	p
M. L. Wilson			
Saline—H. W. Quirk	p	p	a
R. C. Kerchman			
Saunders—C. F. Kirkpatrick	a	a	a
E. O. Weber	a	a	a
Scottsbluff—A. L. Cooper	a	a	a
G. W. Pugsley	a	p	p
Seward—L. H. Lee	a	a	a
J. E. Meisenbach	a	a	a
Thayer—H. J. Newell	a	a	a
R. Decker	a	p	p
Valley			
Washington—J. V. Hinchman	a	a	a
Morris Nielsen	p	p	p
Webster—R. S. Martin	p	p	p
York—F. S. Morris	a	a	a

COUNCILORS

A. P. Overgaard	p	p	p
H. J. Lehnhoff	p	a	a
C. P. Fordyce	p	p	p
A. E. Cook	p	p	p
S. A. Preston	p	p	a
Frank Tornholm	p	p	p
H. E. Potter	p	p	p
W. J. Douglas	a	a	a
R. D. Bryson	p	p	a
L. W. Rork	a	p	p
C. A. Selby	p	p	a
F. W. Plehn	a	p	p

OFFICERS

President—H. E. Potter	p	p	p
Vice Presidents—C. P. Fordyce	p	a	a
I. Lukens	a	a	a
Secretary-Treasurer—R. B. Adams	p	p	p
Librarian—W. P. Wherry	p	a	a

EX-PRESIDENTS

M. L. Hildreth	a	p	p
A. S. von Mansfelde	a	a	a
J. E. Summers	a	a	a
W. O. Bridges	a	a	p
A. R. Mitchell	a	a	a
H. M. McClanahan	a	a	p
A. E. Jonas	a	a	a
F. A. Long	p	p	a
Harold Gifford	a	a	p
L. M. Shaw	a	a	a
P. H. Salter	a	a	a
J. P. Lord	a	a	p
I. N. Pickett	a	a	a
J. P. Gilligan	a	a	a
E. W. Rowe	a	p	p
W. F. Milroy	a	a	p
C. L. Mullins	a	a	a
J. M. Banister	a	a	p
H. W. Orr	a	p	a
M. S. Moore	p	a	p
B. B. Davis	a	a	p
B. F. Bailey	p	p	p
Morris Nielsen	p	p	p
Palmer Findley	a	a	p
H. J. Lehnhoff	p	a	a

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Vol. XII July No. 7

ROSTER OF OFFICERS

	Term Expires
Dr. H. E. Potter, Fairbury, President	1927
Dr. H. E. Potter, Fairbury, President	1927
Dr. Isaiah Lukens, Tekamah, Vice President	1927
Dr. Isaiah Lukens, Tekamah, Vice President	1927
Dr. W. P. Wherry, Omaha, Librarian	1927

COUNCILORS

Dr. R. D. Bryson, Calloway	1929
Dr. L. W. Rork, Hastings	1929
Dr. C. A. Selby, North Platte	1929
Dr. F. W. Plehn, Scottsbluff	1929
Dr. S. A. Preston, Fremont, Chairman	1928
Dr. W. J. Douglas, Atkinson	1928
Dr. Frank Tornholm, Wahoo	1928
Dr. H. E. Potter, Fairbury	1928
Dr. A. P. Overgaard, Omaha, Secretary	1927
Dr. H. J. Lehnhoff, Lincoln	1927
Dr. C. P. Fordyce, Falls City	1927
Dr. A. E. Cook, Randolph	1927

DELEGATES TO A. M. A.

Dr. A. D. Dunn, Omaha	1927
Dr. R. W. Fouts, Omaha	1928

DELEGATE, COUNCIL ON MEDICAL EDUCATION, A. M. A.

Dr. J. S. Welsh, Lincoln	1927

MEDICO-LEGAL DEFENSE COMMITTEE

Dr. A. S. v. Mansfelde, Ashland, Honorady Chairman	
Dr. B. B. Davis, Omaha, Chairman	1929
Dr. Czar C. Johnson, Lincoln	1927
Dr. R. B. Adams, Lincoln, Secretary	1927

Note: In case of suit notify secretary at once.

AN ERROR OF OMISSION

A regrettable error for which the editor and linotype operator are equally to blame occurred in the editorial covering the annual meeting, in last month's Journal. Dr. B. R. McGrath, Grand Island, was elected president and Dr. R. B. Adams, Lincoln, was re-elected secretary-treasurer. The omission of one entire line made it appear that Dr. McGrath was elected secretary-treasurer and omitted mention of Dr. Adams. "Sor-r-ry", as the English would say!

THE RECENT MEETING AT WASHINGTON

Washington, heart of the Nation, perhaps the most beautiful city in America, is, with a single exception, best suited to entertain an annual meeting of the American Medical association. Even so, the hotel facilities were taxed to care for the 6,273 fellows and their ladies, and the scientific and commercial exhibitors who must have brought the grand total to a figure approaching 12,000. It was a record attendance and may well cause those in the councils of the Association to ponder over the problem of caring for those attending future meetings as the association and the interest in the annual meetings grows.

The two days preceding the opening of the scientific sessions were filled with matters of deep human interest. On Monday afternoon, wreaths were placed by the Officers of the American Medical Association on the statues of Dr. Benjamin Rush, Dr. Samuel Gross, Dr. William Crawford Long; on the busts of Dr. William C. Gorgas and Dr. Walter Reed; and on a painting of Dr. John S. Billings. Later in the afternoon a pilgrimage was made to Mt. Vernon and there the President of the American Medical Association placed a wreath on the tomb of George Washington, and the President of the Woman's Auxiliary to the American Medical Association placed a wreath on the tomb of Martha Washington. The entrancing beauty of these ceremonies was their entire simplicity.

On Tuesday afternoon memorial services were held in the amphitheatre of Arlington Cemetery in honor of the physicians who lost their lives in the World War. The first American soldier killed in the World War by the enemy, was a physician. Five hundred medical officers died from all causes during the World War. It was, therefore, most fitting that on the eve of the assembling of the hosts of organized medicine memorial exercises should be held in this, the Nation's hallowed spot.

Dr. Hubert Work, Secretary of the Interior, was honorary chairman; Major-General Charles F. Summerall, Chief of Staff, U. S. A., made the principal address. He was followed by Baron de Cartier, Belgian Ambassador to the United States, with a short address. Following the services a wreath was placed on the tomb of the Unknown Soldier.

Tuesday evening the opening meeting was held in the largest auditorium in Washington. Six thousand people promptly filled this to capacity and it was estimated that four thousand were unable to gain admittance.

President Coolidge honored the association by his presence and gave a thirty minute address brimming with the good sense for which the President is noted.

Following the address of President Coolidge, the President-Elect of the American Medical Association, Dr. Jabez N. Jackson, was introduced and delivered his inaugural address.

The meetings of the fifteen scientific sections were most of the time crowded to capacity showing the intense interest in all lines. Manifestly the sessions cannot be covered in this article.

The reception to the president and officers of the American Medical Association held at the Mayflower Hotel, Thursday evening, was a brilliant event, crowding the very spacious hotel to its capacity.

Dr. William S. Thayer, of Johns Hopkins, was elected President-Elect, and Minneapolis was chosen for the next place of meeting.

THE TREND TOWARD SPECIALISM

In the preliminary report of the Commission on Education of January, 1927, the problem of Specialization of Physicians is presented. In this chapter we are informed that 10.5 per cent of the profession are practicing a specialty. It is assumed, however, that this calculation does not include internal medicine as a specialty. There is a notable increase in the tendency of recent graduates to specialize. This is particularly noticeable in the recent graduates who locate in large cities. In Wisconsin, Indiana and Louisiana, 20-25 per cent of all practitioners in cities of 50,000 and more inhabitants are practicing specialties. This in contrast to the profession as found in communities of 5,000 to 10,000 where but 2 to 3 per cent of the profession are specializing. Dean Werskotten made a study of the graduates of 52 medical schools and found that in the years of 1915-1920, 42.5 per cent of the class of 1915 and 36.1 per cent of the class of 1920 restricted their practice. It is also of interest to note that from 15 to 17 per cent of these graduates were on full time salaries and 17 to 20 per cent were on part time salaries.

The reasons given for the trend toward the cities and into specialties are: The availability of hospitals, laboratories and consultants; the emphasis in medical training and the demand of the public.

The average age of practitioners in rural districts is 52 years. While the conditions are not yet alarming, it is affirmed that if the present trend continues there will be developed an alarming state of affairs in the near future. The automobile, good roads and telephone can do much to relieve the situation by greatly extending the radius of practice. But the cost to the consumer will be inevitably increased and this is a factor which deserves serious consideration. A substitute for the clinics, visiting nurses and hospital wards of the cities may be necessary to provide for the needs of the poor and the near-do-wells of rural districts. And this harks back to the bug-a-boo of State Medicine.

—Palmer Findley.

KEEPING UP WITH THE LAITY

Although quantities of medical "bunk" are still foisted upon the innocent public, the search for genuine medical novelties has led several popular scientific journals to maintain a certain touch with the latest results of medical research. As a consequence, the medical man is not infrequently heckled by laymen about new facts that have escaped his notice; and to avoid the embarrassment which confessions of medical ignorance entail, he will do well to read not only such journals as the Scientific American and the Literary Digest, but in particular, Science, the weekly publication of the American Association for the Advancement of Science. (The Science Press, New York City, Grand Central Terminal). This journal, under Science News, prints every week, several pages of gleanings from scientific journals; and a large proportion of them are medical. In the last number more than five-sixths of these notes are medical. This particular bunch, to be sure, is largely from the recent Washington meeting; but in the course of the year many abstracts appear from first-class medical journals of small circulation, that the average man is apt to miss. Of the leading articles, too, an astonishingly large proportion are essays by medical men. The unfortunate physician who is looking forward with trepidation to the preparation of a presidential or other formal address will find these pages to be a mine of factual and anecdotal nuggets. —H. Gifford.

THE PASSING OF DR. ABRAHAM ZINGHER, IMMUNOLOGIST

In the untimely, accidental death by asphyxiation of Dr. Abraham Zingher, New York, at the age of forty-two, scientific medicine has suffered a distinct loss.

Dr. Zingher received his degree in medicine from Cornell University medical college in 1908, after which he served as intern in the Mount Sinai hospital.

He made a special study of bacteriology and was clinical professor of children's diseases at the New York Polyclinic. It was in the field of pediatrics that his most notable work was done. He was an ardent student of immunology and his connection with the health department of New York gave him an opportunity to demonstate the value of preventive medicine.

The Dick test was demonstrated and advocated with great enthusiasm by him at the Chicago convention two years ago. To him belongs to a large degree the popularity and wide use of both the Dick and Schick tests. He lost no opportunity at the Chicago meeting to sound the praises of the Doctors Dick for the splendid work they had accomplished in scarlet fever, its cause and prevention.

His untiring energy and zeal will be a serious loss in this field where there are such possibilities.

All honor to his memory.

—John D. Reid.

FIFTY YEARS OF MEDICAL SERVICE

Two physicians, both of whom were graduated from the University of Louisville, Ky., in 1876 and both pioneer doctors of Richardson county, were honored at a dinner at Falls City, May 4, given by the Richardson County Medical society in honor of the two men's fifty-one years of service in the medical profession.

The two doctors, Dr. J. A. Waggener, Humboldt, and Dr. J. C. Shepherd, Rulo, are both active and in excellent health.

The physicians were extremely modest in accepting the praise offered by fellow members of the medical professions, and gave their wives credit for their ability to act as beneficiaries to mankind for more than a half-century.

"It was the pot of hot coffee that I found on the stove when I returned from a cold drive with horse and buggy," Dr. Waggener said, "that renewed my vigor and steadied my nerves. Whatever credit I get should also be given to my wife."

Children of both doctors followed in the footsteps of their fathers. Doctor Waggener has three sons, Dr. H. A. Waggener, Los Angeles, Calif.; Dr. W. R. Waggener, Denver and Dr. J. T. Waggener, Adams, Neb.

The only son of Doctor Shepherd who is a doctor is Dr. William Shepherd, Rulo, president of the Richardson County Medical society.

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"CERTAIN SAMARITANS" AND DR. OLGA STASTNY

In a volume "Certain Samaritans", just published, by Dr. Esther Pohl Lovejoy, New York, on the work of the medical women in the World War and in the subsequent reconstruction period in the Near East, Dr. Olga Stastny, Omaha, is mentioned as the heroine of Macronissi Island. Dr. Stastny had charge for five months, of as many as eight thousand refugees, in quarantine on Macronissi Island in the Aegean sea, most of whom had been exposed to typhus fever and smallpox, when landed, underfed, clad in rags, widowed, or torn from their husbands, orphaned, disheartened.

Dr. Stastny was abroad in postwar medical service from 1918-1924. A medal was bestowed on her by the French government, and she was invested with the Cross of St. George, by the Greek government.

SOME GERMAN SPAS

The Nebraska State Medical Journal is in receipt of literature concerning German health resorts, one being a very readable volume entitled "Some German Spas" and the other "Deutscher Baderkalender". Every American going to Europe whether for health or merely for pleasure has a desire to visit some of the German health and bathing resorts famous for generations. In no country in the world has hydrotherapy reached a pinnacle of success equal to that in Germany. The resort hotels, for all purses, are not excelled, if equalled, anywhere. One of the pleasantest memories of a trip to Europe, is that of a glimpse of Bad-Ems and Baden-Baden. Literature may be obtained by addressing German Health Resorts, 630 Fifth Ave., New York.

NEBRASKA ACADEMY OF OPHTHALMOLOGY AND OTOLARYNGOLOGY

The Nebraska Academy of Ophthalmology and Oto-Laryngology held their fourteenth annual meeting at the Lincoln Country Club, Lincoln, Nebraska, the evening of May 9th.

The following new officers were elected: president, Dr. Harry Benson, Oakland; vice-president, Dr. J. B. Potts, Omaha; secretary-treasurer, Dr. Clarence Rubendall, Omaha.

Dr. Harold Gifford presented the case history of an orbital tumor. The appearance of the extrusion of the eye indicated that the tumor was at the outer angle of the orbit but upon operation it was found at the inner angle.

Dr. W. L. Curtis presented a case of atrophic rhinitis with an ivory implant in the right side of the nasal septum. There had been a marked improvement in the symptoms since the operation.

Dr. J. J. Hompes presented a case of sarcoma of the left maxillary sinus for Dr. J. B. McPherson of Hastings.

Dr. E. B. Brooks presented a case of acute mastoiditis, left, complicated with a temporal lobe abscess. Boy, ten years old, injured in an automobile accident a year before the present trouble began. The left ear discharged for some time following the accident but had been healed and dry for some time before the present trouble began. He was seen February 11th, with symptoms of acute mastoiditis, and treated expectantly for a few days. February 18th the patient had a convulsion with aphasia. Immediate operation. The lateral sinus was exposed and opened, it was normal. The dura was then exposed over the temporal lobe but as it looked normal no further exploration was made at that time. A few hours after the primary operation the patient had another convulsion and the wound was reopened to the dural exposure and the temporal lobe explored. A cortical abscess was located and drained. Recovery.

Dr. Sanford Gifford, assisted by Dr. Abe Steinberg, demonstrated on rabbits the method of tattooing corneal scars with colloidal gold.

Dr. E. T. Manning, Omaha, by invitation, discussed hay fever, its diagnosis and treatment.

—Clarence Rubendall.

EDITORIAL PARAGRAPHS ABOUT THE WASHINGTON A. M. A. MEETING

It is 43 years since the A. M. A., met at Washington, before.

The establishment of pleasant personal contacts is worth the trip.

The typical doctor of 1927 is a smooth shaven optimistic looking individual.

Operative measures in fracture of the femur is being more strongly advocated.

In the east they pronounce it digi-tay-lis, and the dictionary seems to bear them out.

There is a great difference in water, but all of it is wet and after all that is what matters.

Phillipsley thinks digitalis as well as iodin has a place in preparing goiter patient for operation.

Met a Christian science nurse on the trip. If all is imagination, then she must nurse imagination.

Dr. Donald Macrae, Council Bluffs, was elected a member of the Judicial Council of the A. M. A.

Rheumatic fever does not necessarily mean painful joints, but involvement of the heart. (Thayer).

Collings (New York) treats fibrous prostatic bar by electric cutting with a specially devised electric knife.

Dr. Olga Stastny, Omaha, was elected First Vice President of the National Woman's Medical Association.

Sherman (Pittsburg) says it is not true that infection follows bone plates and screws, if absolute asepsis prevails.

Mrs. F. A. Long, Madison, was elected one of the Vice Presidents of the Woman's Auxiliary to the American Medical Association.

Emerick (Columbus, Ohio) has studied children twenty years and has yet to see a child of 14, delinquent since childhood, reformed.

Combined typhoid vaccine in general paralysis was commended. Kunde of Chicago, has given repeated doses, up to eight hundred million.

The question of medicinal liquors will not keep down. The lay press, however, gave the impression that the House of Delegates discussed nothing else.

White, of Boston, said resorts had value in heart disease because they get patients away from business cares. He favors venesection in pulmonary edema.

Roberts, of Atlanta, considers the heart the most adaptable organ in the body. He thinks every obese person a potential cardiac, but fatty changes in heart muscle is a small factor.

Francis Carter Wood thinks colloidal lead may make cancer more sensitive to x-rays, and that the combined treatment now being tried out may improve the results above that from lead alone.

Dr. J. P. Lord, Omaha, was chairman of the Section on Orthopedic Surgery, attended at times by as many as 700 surgeons, and proved an able executive. A good voice and a quiet reflective dignity featured his work.

Discussing the drug treatment of heart disease, Mackie (New York), said, when in doubt about the indication for quinidine, do not give it. He stressed the proposition that nervous and sleepless patients should be assured sleep by bromides.

Glaze (Birmingham, Ala.) treats ringworm of the palms and planter surfaces with salicylic acid, 40%; powdered starch, 10%; white vaseline 50%. No dressings are required. Cases are practically cured in four days. Mass desquamation results and the patient is not incapacitated.

A New York dermatologist of national renown, on viewing Dr. Wohl's scientific exhibit of cases of actinomycosis, sporotricosis, blastomycosis, etc., being attracted by the legend *"Fungus Diseases in Nebraska"*, remarked, "Nebraska—Is that Omaha?" Oh, those provincial Easterners!

The Southern people honor their dead heroes by naming hotels after them. Thus, Frederick, Maryland, has the Francis Scott Key Hotel; Winchester, Virginia, the George Washington Hotel; Staunton, Virginia, the Stonewall Jackson Hotel; Lexington, Virginia, the Robert E. Lee Hotel.

Artificial lamps for producing ultra-violet rays cannot take the place of sunlight in the treatment of pulmonary tuberculosis, Dr. George H. Evans, of San Francisco, declared in a paper on "Heliotherapy in Tuberculosis." These lamps nevertheless are beneficial, he said, in the treatment of other forms of tuberculosis. The probability is that sunlight contains other rays than ultra-violet rays that are beneficial for treating pulmonary tuberculosis, it is said.

A paragrapher in a Washington paper commented on the meeting of doctors thus:

There are enough doctors in town attending this great convention to keep us all in prescriptions for a month, and we hope they will, but what we started to say is that it's the biggest thing of the kind in the annals of medicine since they held their great meeting here at Albaugh's, September 5, 1887, nearly 40 years ago, when Grover Cleveland delivered the address of welcome, and there was a monster banquet in Pension Office hall. It was a great time for pills! As the poor guy with the appendicitis remarked to the eminent surgeon, "Welcome to our midst''

LIST OF NEBRASKA PHYSICIANS REGISTERED AT THE A. M. A. MEETING IN WASHINGTON

Monday: Colburn, William O., Lincoln; Dunn, A. D., Omaha; Fouts, R. W., Omaha; Long, F. A., Madison; Lord, John Prentiss, Omaha; Lynch, Delia A., Omaha; Miller, A. L., Kimball; Moody, Willson B., Omaha; Patton, Jas. M., Omaha; Potts, John B., Omaha; Rowe, Edward W., Lincoln; Smith, Roscoe L., Lincoln; Winnett, Orr H., Lincoln; Wohl, Michael G., Omaha; Woodward, James M., Lincoln; Quigley, D. T., Omaha; Zemer, S. G., Lincoln.

Tuesday: Davis, J. Calvin, Jr., Omaha; Gifford, Sanford R., Omaha; Hays, Edward R., Falls City; Henske, J. A., Omaha; Jonas, A. F., Omaha; Moore, P. L., Omaha; Orr, H. W., Lincoln; Rubendall, Clarence, Omaha; Taylor, Willis H., Omaha; Wherry, William P., Omaha.

Wednesday, McKinnon, A. I., Lincoln; Mitchell, A. R., Lincoln; Mulligan, H. R., Hastings.

Thursday: Munger, Arbor D., Lincoln; Owens, Chas. A., Jr., Omaha; Smith, Hal C., Franklin.

Total 33.

MINUTES, ANNUAL MEETING, WOMAN'S AUXILIARY

The second annual meeting of the Woman's Auxiliary to the Nebraska State Medical Association was held in Lincoln, Nebr., May 10, 11 and 12th, 1927. The numerous affairs planned for the Auxiliary were well attended.

MRS. FRANKLIN P. GENGENBACH
President, Woman's Auxiliary, A. M. A.

Mrs. Franklin Paul Gengenbach, President of the Woman's Auxiliary to the American Medical Association, was Honor Guest throughout the convention.

Mrs. Roscoe Smith very graciously opened her beautiful home to the Auxiliary for a tea on Tuesday afternoon, May 10. Her committee, consisting of Mrs. J. M. Woodard, Mrs. O. W. Everett, Mrs. G. H. Walker, Mrs. S. O. Reese and Mrs. H. J. Lehnhoff, provided a pleasant entertainment.

The executive board met at dinner at the University Club on Tuesday evening. Mrs. Clarence Rubendall, president, presided, and recommendations and suggestions were made for the consideration of the membership at large.

The annual business meeting followed a delicious and well appointed luncheon at the Lincoln Country Club on Wednesday, May 11th. The invocation was given by Mrs. F. A. Long of Madison and a musical program of folk songs was given by Miss Lillian Polley, soprano, accompanied by Miss Marguerite Klinker. The president's address was followed by the reports of the secretary and treasurer, which showed the Auxiliary to have made a very satisfactory growth during the past year. The presidents of the country auxiliaries answered the roll call and reports were given from the following organized auxiliaries:

Dodge county, Mrs. J. S. Devries, Fremont; Douglas county, Mrs. A. P. Overgaard, Omaha; Holt county, Mrs. F. L. Wilson, Stuart; Jefferson county, Mrs. G. A. Heath, Fairbury; Lincoln county, Mrs. S. A. Selby, North Platte; Madison, Stanton, Pierce, Antelope counties, Mrs. R. A. Frary, Stanton; Pawnee county, Mrs. W. R. Boyer, Pawnee City.

Washington county reported 100% membership.

Mrs. Frank Conlin of Omaha gave a report of her visit to the meeting of the Auxiliary to the Southern Medical Association in San Antonio.

Mrs. F. L. Wilson of Stuart, the state Hygeia chairman, gave a very satisfactory report of her activities toward the extension of Hygeia.

The Auxiliary has this year affiliated with the Nebraska Federation of Woman's Clubs and with the Nebraska Tuberculosis Association and has stressed the physical examination for every member of the family. They voted to expend one hundred dollars toward furnishing the Children's Sun Parlor in the occupational therapy department in the new wing of the University Hospital at Omaha, and also to change their fiscal year to conform to the Nebraska State Medical Association, and date from January to January.

The following officers were elected to take office January 1st, 1928:

Mrs. G. H. Walker, Lincoln, president; Mrs. S. A. Preston, Fremont, vice-president; Mrs. A. E. Gadbois, Norfolk, treasurer.

Mrs. G. A. Young, Omaha, and Mrs. F. B. Young, Gering, were elected directors for two years. The present officers holding over until January 1st, 1928.

Mrs. Gengenbach gave a pleasing and enlightening address on the "Future of the Auxiliary".

The Auxiliary has 265 members and 135 members registered and attended the luncheon.

The committee in charge of the arrangements for the luncheon were: Mrs. B. F. Bailey, chairman; Mrs. Harry Everett, Mrs. J. M. Mayhew, Mrs. E. J. Angle, Mrs. Fred Teal and Mrs. Geo. Covey.

On Thursday morning the visiting ladies were given a drive about the city and had an interesting visit to the new capitol.

Mrs. H. W. Orr was in charge of this and the automobile committee consisted of Mrs. S. G. Zemer, chairman; Mrs. Clayton Andrews, Mrs. Torrence Moyer, Mrs. W. C. Becker and Mrs. Roy Whitham.

The courtesy committee were present at all the meetings to greet the Auxiliary members and consisted of Mrs. B. F. Williams, chairman; Mrs. F. B. Johnson, Mrs. E. E. Rider, Mrs. K. S. G. Hohlen and Mrs. F. C. Coleman.

The publicity was in charge of Mrs. Everett Angle.

MEDICAL SOCIETY OF THE MISSOURI VALLEY

This society was founded in 1888 by Dr. Donald Macrae, Sr., of Council Bluffs, Iowa. It now has more than 500 members in the states of Iowa, Kansas, Missouri, Nebraska and South Dakota. During the present year the society is being reorganized with the object of making it more of a teaching organization. There are seven medical schools in this district that should furnish sufficiently abundant new material to make this one of the most worth while societies in America. At the coming meeting in Des Moines, September 14th, 15th and 16th, representatives from all of these medical schools will have a place on the program in addition to several local and nationally prominent men. Dr. Thomas G. Orr, president; Dr. Charles Wood Fassett, secretary; Dr. Donald Macrae, chairman of the Executive Committee.

HISTORY OF MEDICAL WOMEN BEING COMPILED

The Medical Women's National Association is compiling a history of pioneer medical women of the United States.

Will the physicians of the state aid in sending the names and addresses, and any further information they can, concerning the early pioneer medical women of Nebraska, to Dr. Olga Stastny, 1426 Medical Arts Bldg., Omaha, Nebr.

It is especially desired to reach those who are not listed in our state records, having practiced before registration was compulsory.

Dr. Olga Stastny, Omaha, is collecting the data for our state of Nebraska.

INTERNSHIPS — 1927 GRADUATES, CREIGHTON UNIVERSITY, COLLEGE OF MEDICINE

J. L. Barritt, Mercy Hospital, Council Bluffs, Iowa.
F. E. Brown, St. Vincent's, Portland, Oregon.
R. A. Carrow, St. Mary's Hospital, Minneapolis, Minn.
Closson, H. O., St. Margaret's, Kansas City, Kansas.
Condon, F. J., San Diego County General, San Diego.
Connors, J. J., St. Mary's, Detroit.
Dent, T. E., St. Joseph's, Omaha.
Dorwart, H. E., St. Alexis, Cleveland, Ohio.
Egan, W. J., St. Joseph's, Omaha.
Ferrara, J. A., Reading Hospital, Reading, Pa.
Finnegan, J. F., St. Mary's, Rochester, New York.
Flaherty, Romayne, St. Anthony's, Oklahoma City.
Fransco, P. P., St. Mary's, Minneapolis, Minn.
Garding, C. J., St. Mary's, Minneapolis, Minn.
Glass, V. S., St. Alexis, Cleveland, Ohio.
Gleason, M., Sisters of Charity, Buffalo, N. Y.
Greenberg, M., Sinai Hospital, Baltimore, Md.
Hennegan, G. F., St. Mary's, San Francisco.
Hubenka, A. H., St. Joseph's, Omaha.
Kirwin, J. J., St. Lukes Hospital, San Francisco.
Klein, C. L., Holy Cross Hospital, Salt Lake City.
Lenahan, J., St. Mary's Hospital, San Francisco.
Lohr, L. J., St. Elizabeth's, Dayton, Ohio.
Manley, T. M., San Diego County, San Diego.
Martin, L. P.
McCarthy, A. M., St. Anthony's Hospital, Oklahoma City.
McCarthy, J. E., St. Louis City, St. Louis, Mo.
McGowan, J. P., St. Joseph's, Omaha.
McKenna, H. J., Mercy Hospital, Des Moines, Iowa.
Melvin, J. J., St. Paul's Sanitarium, Dallas, Texas.
Merkle, R. W., St. Louis City and County, St. Louis, Mo.
Montalbano, A. J., Santa Clara Hospital, San Jose, Cal.
Munch, O. L., St. Francis Hospital, Santa Barbara, Cal.
Mullman, A. J., St. Margaret's, Kansas City, Kansas.
Norris, E. W., U. S. P. H. S.
O'Connor, C. A., St. Francis Hospital, Santa Barbara, Cal.
Podlesak, J. J., Franklin Hospital, San Francisco.
Raney, R. B., St. Joseph's, Omaha.
Robbins, M. H., St. Alexis, Cleveland, Ohio.
Rich, S. H., St. Joseph's, Omaha.
Schueler, L. A., Seattle City Hospital, Seattle.
Schwartz, M. F., St. Mary's Hospital, Detroit, Mich.
Smith, E. E., St. Louis City, St. Louis, Mo.
Sternhill, I., Mt. Siani Hospital, Cleveland, Ohio.
Sullivan, W. A., St. Jos. Hospital, Kansas City, Mo.
Tillitson, Mrs. Maude Hester, Post-Graduate Univ. of Pennsylvania.
Tynan, B. J., U. S. P. H. S.
Wilson, L. L., St. Joseph's, Omaha.

INTERNSHIPS — 1927 GRADUATES, UNIVERSITY OF NEBRASKA, COLLEGE OF MEDICINE

Dee L. Abbott, Swedish Covenant Hospital, Chicago.

H. A. Abbott, Baylor Hospital, Dallas, Texas.

George W. Ainlay, University Hospital, Omaha.

T. M. Barber, Wesley Methodist Hospital, Wichita, Kansas.

Ralph F. Blecker, Franklin Hospital, San Francisco.

Irineo Bringas, Broadlawns Polk County Hospital, Des Moines.

Donald E. Burdick, Allegheny General Hospital, Pittsburgh, Pa.

Raymond B. Burr, Wise Memorial Hospital, Omaha.

Stuart H. Cook, Allegheny General Hospital, Pittsburgh, Pa.

James C. Dickson, Jefferson Davis Hospital, Houston, Texas.

Robert R. Estill, appointment not yet secured.

William P. Garrison, St. Louis City Hospital, St. Louis, Mo.

E. R. Gelvin, Kansas City General Hospital, Kansas City, Mo.

Plomer J. Gustin, Kansas City General Hospital, Kansas City, Mo.

Elmer M. Hansen, University Hospital, Omaha.

Harvey B. Harris, Northern Pacific Beneficial Association Hospital, Tacoma, Washington.

Robert E. Harry, U. S. Public Health Service.

J. M. Hughes, Missouri Methodist Hospital, St. Joseph, Mo.

Carson E. Hunt, Methodist Hospital, Omaha.

T. C. Kenaston, St. Lukes Hospital, Jacksonville, Florida.

O. C. Kreymborg, St. Katherine's Hospital, Omaha.

Karl E. Krueger, appointment not yet secured.

Verne I. Lacey, appointment not yet secured.

George K. Lewis, St. Louis City Hospital, St. Louis, Mo.

Edward J. Liska, Harper Hospital, Detroit, Michigan.

Roscoe P. Luce, University Hospital, Omaha.

Esther H. McEachen, The Woman's Hospital, Philadelphia.

R. N. Macagba, appointment not yet secured.

Arthur W. Miller, California Lutheran Hospital, Los Angeles.

J. W. Miller, Naval Base Hospital, San Diego.

Rose R. Minkin, The Woman's Hospital, Philadelphia.

Charlotte Mitchell, Douglas County Hospital, Omaha.

Meade Mohun, University Hospital, Omaha.

Clifford V. Morgan, Walter Reed General Hospital, Washington, D. C.

Harry M. Murdock, University Hospital, Omaha.

John R. Nagle, Clarkson Hospital, Omaha.

Charles L. Nutzman, University Hospital, Omaha.

Oliver P. Rosenau, Swedish Covenant Hospital, Chicago.

Edwin L. Rypins, Scranton State Hospital, Scranton, Pa.

Ralph E. Sawyer, Swedish Immanuel Hospital, Omaha.

H. E. Schroeder, Eye, Ear, Nose and Throat Hospital, New Orleans.

Reuben Z. Schulz, Peter Bent Brigham Hospital, Boston.

Edward H. Stahly, Lincoln General Hospital, Lincoln, Nebr.

Richard A. Steere, U. S. Public Health Service.

Joseph S. Swoboda, Murray Hospital, Butte, Montana.

A. R. Wanamaker, Ancker Hospital, St. Paul, Minn.

Joseph R. Whalen, Douglas County Hospital, Omaha.

Frank E. Wiebe, King County Hospital, Seattle.

MEDICOS WIN "FRAT" HONORS BY MERIT

The Nebraska chapter of Sigma Xi society has elected the following students of the University of Nebraska college of medicine to membership: O. C. Ehlers, R. Z. Schulz and W. D. Wessley of the department of anatomy; H. I. Brown, W. H. Hamsa, E. M. Hansen and R. J. Moss of the department of bio-chemistry, and C. F. Kent, W. R. Mechtenberg and R. L. Schroeder of the department of physiology and pharmacalogy.

Sigma Xi is an honorary society organized to promote original work in science. Election to membership is based on meritorious contributions to scientific research, as well as high scholastic standing.—Omaha Bee.

THE SOCIETIES

Omaha-Douglas County Medical Society, Tuesday evening, May 24, 1927. Dr. Frank Conlin, president, called the meeting to order.

Brief biographies of Drs. Coffman, Gibbs and Spalding read.

Dr. Conlin announced that the health commission had sent a letter to the society asking the members to meet with him to discuss the advisability of a campaign for diphtheria immunization. He called all the pediatricians of Omaha and asked them to be present.

Dr. Floyd Clarke, appointed as chairman of the committee to look into this propostion at the last meeting made the following report:

I was fortunate enough to be present at this meeting. Dr. Pinto organized the meeting of the doctors and the head of the visiting nurses and some of the other social agencies around town to wipe out diphtheria, by 1930. That is the slogan. We had a very enthusiastic meeting in the Council Chamber at the City Hall and it was agreed that the program should go on. It only remains for the fulfillment of this program. The pediatricians were present, many other doctors were there, and it was quite an enthusiastic meeting. I feel confident that the campaign will be successful. I move that the Omaha-Douglas County Medical Society endorse the movement of Dr. Pinto and cooperate with him in any way possible in putting on this campaign for eradicating diphtheria before 1930.

Unanimously carried.

Announcement of a meeting on June 7th for consideration of the plans for the New Douglas County Hospital was made.

The first speaker on the evening's program was Dr. Karl Werndorff, of the Council Bluffs Clinic, Council Bluffs, who talked on "New Viewpoints in the Early X-ray Diagnosis of Joint Disease". (With lantern slides). Discussed by Drs. Robert Schrock, J. W. Martin and A. F. Tyler.

Case Report, "Cholelithiasis", Illustrated With Cystograms, Dr. W. L. Ross, Sr.

Case Report, "Traumatic Aneurism of the Femoral Artery", Dr. J. E. Summers. (To be published).

Case Report, "Series of X-ray Pictures and Findings in Lobar Pneumonia", Dr. J. E. Kirk. X-ray Findings by Dr. Overgaard.

Dr. Pinto talked briefly on the proposed plan for the campaign against diphtheria.

—Earl C. Sage, M. D., Sec'y-Treas.

The Saline County Medical Society sponsored a meeting of the physicians of neighboring towns. Accordingly, about thirty doctors and their wives met at Friend, Tuesday evening, May 31st, and were served an elaborate dinner at the First Congregational church parlors by the Friend physicians and their wives, after which the doctors listened to three exceptionally interesting and instructive papers by Dr. A. L. Bixby, of Geneva; Dr. Wm. Sandusky of Seward and Dr. R. K. Johnson, of Friend. These papers were discussed by the physicians. After dinner, while the doctors repaired to Gilbert Library where the program was put on, Dr. and Mrs. Hamilton opened their spacious home for the entertainment of the ladies. The doctors in attendance were: Dr. V. V. Smrha, of Milligan; Dr. J. G. Muir and Dr. H. J. Wertman, of Milford; Dr. A. B. Stratton, of Exeter; Dr. C. W. Doty and Dr. J. B. Williams, of Beaver Crossing; Dr. A. A. Ashby, of Fairmont; Dr. Jos. Morrow and Dr. Wm. Sandusky, of Seward; Dr. Jos. Bixby and Dr. D. C. Stansberry, of Geneva; Dr. A. A. Conrad, Dr. F. J. Stejskal, Dr. M. R. Byrnes and Dr. H. W. Quirk, of Crete; Dr. Frank T. Hamilton, Dr. J. C. Byers and Dr. Rodney K. Johnson, of Friend.

—H. W. Quirk.

The Republican Valley and Tenth Councilor Society held their Semi-Annual meeting at Holdrege, Nebr., May 26th, 1927, Dr. J. M. Willis, president, presiding.

Dinner was served by the ladies of the Methodist Episcopal church in the church parlors for the members and their wives. This was a splendid dinner enlivened by many entertaining novelties introduced by the Holdrege ladies.

The meeting convened in the Phelps County District Court room. Thirty-five members were present and a short worth while program was given, as follows:

Address of Welcome, Dr. P. A. Sundbury, Holdrege; Reply by Our President, Dr. J. M. Willis, McCook; Cardiac Therapy, Dr. Adolph Sachs, Omaha; Medical Ethics, Dr. L. K. Strate, Hastings; Periodical Health Examinations, Dr. L. W. Rork, Hastings, (Councilor 10th District).

The ladies were well entertained by the Phelps County Medical Auxiliary.

It was gratifying, indeed, to see so many busy practitioners devoting the day to fellowship and renewing their interest in medical knowledge. It speaks well for the future of medicine in Nebraska.

—Lothar F. Egen, Sec.

The Madison, Stanton, Pierce and Antelope Counties Medical Society, at Norfolk, May 17, was addressed by Dr. Adolph Sachs, Omaha, on Diseases of the Heart and Their Treatment.

Forty physicians and their wives were present at the regular meeting of the **Dodge County Medical Society**, held at Scribner, Monday evening, May 16. Prior to the meeting of the association and auxiliary a dinner was served in the Congregational church. An interesting program was carried out at the meeting.

HUMAN INTEREST TALES

Dr. E. M. Stewart, formerly of Imperial, has located at Eagle.

Dr. Karl Connell, now of New York, visited in Omaha recently.

Dr. and Mrs. G. G. McKhan, Lincoln, have returned from Europe.

Dr. and Mrs. D. R. Rogers, Ragan, visited in West Virginia last month.

Dr. Hal C. Smith, Franklin, went abroad with Peck's tour in May.

Dr. F. W. Vaughn, formerly of Gregory, S. D., has located at Hay Springs.

Dr. and Mrs. A. J. Offerman, Omaha, spent a month visiting at Seattle recently.

Dr. Paul Gillespie, Fullerton, has gone to Europe for special study in surgery.

Dr. J. J. Bruce, formerly of Mullen, is about to locate at some point in Texas.

Dr. K. E. Kruger, recently intern in Lord Lister Hospital, has located at Dodge.

Dr. Ted Riddell, Scottsbluff, has gone to Europe with one of Peck's clinical tours.

Dr. L. M. Downing, Cedar Rapids, Iowa, oculist, visited friends in Fairbury, recently.

Dr. F. W. Buckley and Dr. W. T. Wildhaber of Beatrice have gone to Vienna for study.

Dr. and Mrs. J. A. Waggener, Humboldt, are visiting in Colorado and California this summer.

Dr. W. D. Mackechnie, Indianola, has for some time been filling a position at the Lincoln Sanitarium.

Dr. and Mrs. O. L. Wilson, Rushville, have returned home after a prolonged visit in Indiana and Illinois.

Dr. R. D. Bryson, Calloway, has gone to Ostend, delegate to the International Convention of Rotary Clubs.

Dr. Lydia Schaum, foreign missionary, home on leave, spoke on missions in southern Texas the last of May.

Dr. G. W. Lambley, Ainsworth, attended the reunion of his class—that of '83, at Keokuk, Iowa, in early June.

Dr. Grace Crandall, for the past ten years a medical missionary at Liu-ho, China, is visiting her sister at North Loup.

Dr. and Mrs. Frank Conlin, Omaha, honored the members of the Alpha Kappa Kappa fraternity at tea, May 22.

Dr. Inez C. Philbrick, Lincoln, entertained the premedic girls and the members of the Medical Woman's club, May 28.

The marriage of Dr. Claude R. Watson, Mitchell, and Miss Mabel Claire McDaniel of Scottsbluff, June 6, is announced.

Dr. and Mrs. John Holst, Omaha, have gone to Copenhagen, where the doctor will take a postgraduate course.

The Nebraska State Eclectic Medical association held a two-day session at the Hotel Cornhusker, Lincoln, May 25-26.

The marriage of Dr. L. J. Hand, Chicago, Creighton University graduate, and Miss Anna May Crippen, Omaha, is announced.

Dr. H. N. Morrow, Fremont, was taken ill immediately after his return from the annual meeting of the State Medical association.

Dr. and Mrs. J. P. Weyrens, Scottsbluff, are enjoying a motor trip to Chicago, Milwaukee and other points in Wisconsin and Minnesota.

Dr. and Mrs. William Berry, Omaha, have gone to Europe for the summer, she to visit the scenes of her childhood in Germany and he to do clinical work.

Dr. and Mrs. Leroy Crummer, Omaha, have gone abroad. Dr. Crummer is to speak before the International Congress of Medical History, at Amsterdam, July 23.

Before the Nebraska Funeral Director's convention at Omaha, Dr. Morris Nielsen of Blair read a paper on "The Undertaker of the Present". "How have the mighty fallen!"

Drs. H. M. Hepperlin and H. R. Brown, Beatrice, defendants in a long drawn out malpractice suit for $26,000, won the verdict in the District Court of Gage county, recently.

Dr. W. L. Albin and family, Lincoln, have gone to northern Europe on a visit of several months and the doctor will also visit the clinics of the several Nordic countries.

Dr. Victor E. Levine, Omaha biological chemist and nutritionist, spoke before the California State Dietetic association and the Western Hospital association, at Los Angeles, June 1-3.

Dr. Azalia Smith, Omaha, was elected vice president of the Omaha and Council Bluffs Medical Society, recently, and Dr. Mattie Arthur, Omaha, was elected secretary-treasurer.

Dr. and Mrs. J. M. Mayhew and daughters, Lincoln, sailed June 15, from Quebec, for a summer's tour abroad. Dr. Mayhew will spend about 6 weeks in clinical work in London.

Dr. W. L. Dayton, veteran Lincoln oculist, who was very seriously ill in one of the hospitals this spring, has fully recovered and is able to follow his professional work as always.

Dr. C. D. Evans, Sr., of Columbus, was elected grand senior general of the national organization of the Red Cross of Constantine at the annual meeting of the order at St. Paul, Minn.

The injuries suffered by Dr. J. R. Babcock, Ingleside State hospital physician, proved more serious than at first thought. He suffered a basal fracture, and corneal ulcer developed since the accident.

Dr. C. A. Allenberger, Columbus, was elected president of the Nebraska Section, American College of Surgeons, for the current year at a meeting held recently at Lincoln. A clinical meeting will probably be held in Omaha during the fall.

The new Medical Arts building, Omaha, was dedicated with appropriate medical and other ceremonies, May 12. Dr. Frank Conlin, president of the Omaha-Douglas County Medical Society, Dr. Harold Gifford and Dr. W. P. Wherry, spoke for the profession.

Dr. Alfred J. Brown, Omaha, was elected a member of the American Surgical Association at its annual meeting held at Richmond, Va., May 12-14. Inasmuch as this society is limited to about 150 members, election to membership means something. The only other members, resident in Nebraska, are Dr. A. F. Jonas and Dr. J. E. Summers, Omaha.

Two hundred and forty-seven premedic students from the various colleges and universities of Nebraska were guests at the University of Nebraska College of Medicine at its annual pre-medic day exercises, in May. With this number of potential doctors in the Nebraska colleges and universities the supposed shortage of physicians will not be of long duration.

NECROLOGY

Willis M. Wilson, Norfolk, Nebr.; Keokuk Medical College, 1891; Physician at Curtis, Nebr., for many years; member of the State Senate from the Twenty-sixth district, 1915 and 1917; for the last eight years a member of the staff of the Norfolk State hospital; died, May 15, following a stroke of paralysis, aged sixty-eight years.

James S. Goetz, Omaha; Miami Medical College, 1900; practitioner in Omaha for twenty years; associate professor of medicine, University of Nebraska, College of Medicine; staff physician, Wise Memorial and Immanuel hospitals; died of organic heart disease, following an attack of influenza in early spring, June 7, 1927, aged forty-eight years.

R. L. Bentley, Lincoln, Nebr.; Bennett Medical College, 1881; practitioner at Lincoln, Nebr., upward of forty years; died, after a long illness, June 5, aged about seventy-two years.

E. Arthur Bowles, Hebron, Nebr.; College of Physicians and Surgeons, Chicago, 1905; owner and surgeon of the Blue Valley hospital; county physician; past president of the Thayer County Medical Society; died at a hospital in Omaha, June 3, of valvular heart disease, aged forty-eight years.

Wellington S. Gibbs*, Omaha; Medical Department, State University of Iowa, 1879; practitioner in Omaha, since 1881; one of the organizers of the Omaha Medical College and, successively, demonstrator of anatomy, professor of physiology and professor of medicine, which latter chair he held for seventeen years; one of the organizers of the University of Omaha and was one of the directors until his death, which occurred November 12, 1926, aged eighty-one years.

*The passing of Dr. Gibbs, although well acquainted with him, was not known to the editor until recently.

A BABY'S SOLILOQUY

Well, here I am. If this is what they call the world, I don't think much of it. It smells awfully of paregoric. It's a dreadful light world, too, and makes me blink, I can tell you. I don't know what to do with my hands. I think I'll dig my fists into my eyes. No, I won't, either. I'll grab at the corner of my cover and chew it up; and then I'll holler. I hate that nurse the way she puts that spoon into my mouth. When I holler she trots me. That's what comes from being a two-days old baby. There's a pin sticking me now, and if I say a word about it, I'll be trotted or fed.

But I'll tell you who I am. I found out today. I heard folks say, "Hush, don't wake up Mary's baby," and I suppose that pretty, white-faced woman over on the pillow is Mary. No, I am mistaken. for a chap was just here and wanted to see Bob's baby, and looked at me and said I was a funny little toad, and looked just like Bob. He smelled of cigars and I'm not used to them. I wonder who else I belong to? Yes, there's another one—that's grandma, Mary told me, and she took me up and held me against her soft cheek and said, "It was grandma's baby, so it was." I declare I don't know who I belong to. I'll holler and maybe I'll find out. There comes the nurse with milk. The idea of giving babies milk when they want information. I'm going to sleep. I wonder if I don't look pretty red in the face? I wonder why my hands won't go where I want them to?—*Exchange.*

When the symptoms of gall-bladder disease are such that an operation is indicated, a normal appearing gall-bladder does not mean that the diagnosis was incorrect. In such cases the interior of the gall-bladder should be inspected; the finding of a strawberry mucosa, minute particles of cholesterin on the gauze, and stagnant or stringy bile are evidences of pathology. Since the disease is in the gallbladder walls, cholecystectomy is the operation of choice.—Dr. Carl Bearse (*Boston Med. and Surg. Jour.*).

I urge the younger members of the profession to study earnestly and practice faithfully the code of medical ethics; the older members to review it frequently, to obey the dictates of a quickened conscience. May we all study the moral philosophy of medicine. I beseech you to heed this plea for the application of the Golden Rule in medical practice, in the relations of physician and patient, in the relations of physicians to each other—George C. Davis, M. D., in *Lycoming County (Pa.) Bulletin.*

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THE GALL-BLADDER*

THOMAS CASEY WITHERSPOON, M. D.,
Butte, Montana.

When your secretary asked me if I would come to meet with you, I gladly accepted the invitation—first, because I wanted to be here with you; and second, I thought I should enjoy getting a paper together. But I find this difficulty in writing a paper: A man who is busy is interrupted so many times that if he takes a subject which needs to be dealt with somewhat logically and consecutively, it makes it difficult. That I found to be my predicament in writing this paper. More than that, as I came along I found it needed considerable correcting, so I hope you will bear with me.

One of the unsettled questions in medicine today is, "What shall be done with the symptom-producing gall-bladder?" In a major degree the gall-bladder problems have been turned over to the surgeon. The frankly involved organ has yielded but questionably to the efforts of the internists. Sooner or later the majority of patients with distinct gall-bladder lesions have submitted to surgical treatment before relief was obtained.

Many of us here will undoubtedly remember when Dr. Kehr demonstrated at the operating table the futility of diet and drugs in the relief of the distinctly inflamed gall-bladder, particularly those associated with calculus formation. This was at a time when gall-bladder pathology and the role it plays in the production of symptoms both local and general, had not been so fairly determined. In recent years observation and experiment has thrown much light on this subject, both as to the functioning of the gall-bladder and its correlated activity with that of the liver, and as to its pathology and symptomatology when not normal, with the result that the number of those seeking relief from some recognized disorder of the gall-bladder has largely increased. Therefore, the query, "What should be done with the symptom-producing gall-bladder?" Obviously the answer to the question must be predicated upon a fairly full and rational understanding of the part played by the gall-bladder in the healthful functioning of the body and the course and termination of its disease processes.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

The embryology, histology, anatomy, physiology and pathology of the gall-bladder have all been given painstaking observation and thought, and yet, today, many questions of vital fundamental importance have not been settled. Chiefly among these is, "What is the function of the gall-bladder?" I take it that if this dilemma could be settled the rest of the problem might be easily solved.

From a purely anatomic consideration it would seem that the gall-bladder and cystic duct are intimately associated with the biliary duct system and most probably function in relationship to the liver, possibly even the pancreas.

Embryologically considered, the gall-bladder takes its origin from that part of the enteric tube which is immediately distal to the stomach. If this be a guide at all in helping to determine its function it will be noted that from this part of the intestine the chiefest digestive and metabolic organs of the body arise. This holds true in the whole taxonomic series in the animal kingdom. In the lower animals there are the pyloric appendices or caeci as well as the liver and pancreas, and in the higher animals, the pancreas, liver and gall-bladder. The relationship of the pyloric appendices to the digestive processes has been fairly well proven. It is questionable that they in any way add to the mucous membrane contact, being narrow mouthed pouches, but as proven by Krukenberg, they secrete a fluid which is quite similar to that of the pancreas. The relationship of these appendices to the pancreas was thought to be homologous. However, they are found together in some animals and cannot be completely identical. These structures are interesting only in that they follow the general plan of developing organs for digestion in this part of the gut.

The pancreatic diverticuli and the liver diverticulum take their origin in the same neighborhood. The active cells of these organs are derived from the hypoblast of the enteric tube closely neighboring.

I have apparently digressed somewhat from the subject at hand but with a definite purpose, that of calling attention to the more or less allied purpose of these structures which are developed in this particular territory of the intestinal tract.

The hypoblastic outgrowth which develops into the liver and gall-bladder is in man and many of the higher animals, associated with the ventral or distal bud which forms the caudad portion of the head of the pancreas. In fact, this pancreatic bud in man comes directly from the hepatic diverticulum or duct instead of from the intestinal tube. The hepatic bud in point of time is the first one developing from the enteric tube; even before the pharynx forms, or the diverticuli which develop the lungs or pancreas; it is probably also older than the heart in the ancestral history of the vertebrates. The liver bud lies normally adjacent to the omphalo-mesenteric or vitelline veins which return the blood from the yolk sac and during the further development of the liver it is immediately associated with the venous circulation from this source. This liver diverticulum is located in the anterior or ventral mesogastrium which extends between the anterior border of the stomach and the abdominal wall. It will be remembered that the ventral mesogastrium eventually becomes the gastrohepatic omentum, suspending the stomach from the under surface of the liver. It is the mesoblastic cells in this layer, which surrounding the liver cylinders in the development of the liver, that form the capsule of Glisson. The first step in the development of the liver is the formation of the right and left hepatic ducts. These put in their appearance about the same time as does the diverticulum which forms the cystic duct and gall-bladder. The gall-bladder is, therefore, developed contemporaneously with the liver, both coming from the same hepatic diverticulum and from immediately neighboring entoderm. There is likewise the close regional association with the distal or ventral pancreatic bud which forms the caudad portion of the head of the pancreas. This would be rather suggestive of the fact that there is possibly much in common with these organs and possibly they each play an inter-related part particularly in early digestive and metabolic processes.

In man it is rare to find the gall-bladder absent. In certain groups of animals among the ungulates, the ruminants and rodents, there is a striking absence of the gall-bladder. This is also even observed in the ostrich, the dove and many parrots.

In man and warm-blooded animals the liver is formed by numerous solid cylinders, secondary outgrowths from the right and left hepatic duct buds which later coalesce and are bound together by mesodermal tissue of the ventral mesogastrium. Between these cylinders is formed a web of venous capillaries which are at first continuous with the vitelline veins coming from the yolk sac and which finally enter into the sinus venosus of the heart. A little later the umbilical veins form an anastamosis with these veins and finally the portal veins. The artery which supplies the liver is relatively small. The whole arrangement of the liver seems to be for the purpose of intercepting and directing nutrient material in its route to supply the needs of the body. Even in the earliest embryonic stages the materials absorbed out of the yolk sac must pass through this organ before reaching the body circulation; that from the mother's womb a little later must likewise take the same route through the umbilical veins and in the adult the venous currents from the gastro-intestinal tract pass all nutriment except certain lacteal fats through the portal vein. The very large supply of venous blood bearing products of digestion to the liver declares it a most active organ in the first stages of metabolism.

The connection of the gall-bladder with the biliary duct system varies considerably in the taxonomic series and also slightly in man. The common arrangement in the higher animals and man is for the right and left lobe bile ducts to unite in a single hepatic duct and this to join with the cystic duct from the gall-bladder to form the common duct. This common duct later receives the main duct from the pancreas, the duct of Wirsung, just before emptying into the duodenum. It is usual that at this point of confluence there is a marked dilatation known as the diverticulum of Vater. At its entrance into the duodenum it is markedly constricted and is seen as a small papillus on the mucous membrane of the duodenum, known as the papillus of Vater. At this point of narrowing it is surrounded by a varied number of muscle fibres forming the sphincter of Oddi. The one variation in man and some animals is that the right lobe duct instead of uniting with the left to form the hepatic duct passes into the gall-bladder at or near its neck or into the cystic duct separately from the left duct. This latter arrangement is very common in dogs, sheep and calves. In the majority of birds and in many reptiles no common duct is formed. The left hepatic duct usually empties directly into the duodenum while the right enters the gall-bladder to discharge through the cystic duct into the duodenum.

In no animal I believe does the liver wholly empty into the intestine without an association in part with the gall-bladder, if a gall-bladder exists at all. When the gall-bladder is absent the liver empties through its single large hepatoenteric duct or by a number of small ones, directly into the intestine.

Complete description of the normal gall-bladder would but occupy unnecessary time and I wish here to only mention a few matters which bear directly upon the subject as I would like to develop it.

I shall use the words "normal gall-bladder" from time to time, but it must be understood that in speaking of a normal gall-bladder I am using only a relative expression, for like the appendix, prostate or tonsil, there is no satisfactory measure of normality. With this provision then, I will say that the normal gall-bladder holds about 1½ ounces. This may be increased many fold but only through disease or abnormal mechanical conditions. The attachment of the gall-bladder to the liver varies considerably. In one instance the organ may be half buried within the substances of the liver and in another the attachment is a veritable meso-cyst. This arrangement certainly does not indicate the gall-bladder is mobile in order that it may empty its contents.

The wall of the gall-bladder is thin, even translucent and indicates no marked muscular activity. Muscle hypertrophies have been noted and marked thickenings do occur, of an inflammatory character, in the presence of some lesions of the organ or of the biliary ducts. The muscle arrangement follows an irregular design with no apparent uniform or purposeful direction. The mucous layer is thrown into rather tall thin folds dividing the surface into rough polygonal areas. These folds are sometimes wrongly described as villi. In disease and under tension these folds may be flattened out or completely disappear. The mucous cells which line the normal gall-bladder are high, columnar and in a single layer. In disease these may lose their columna form. There are no glands in the gall-bladder wall which can rightfully be described as such. The glands of Luschka are rather questionable glands. In this connection I would say that primary adeno-carcinomas of the gall-bladder are also technically very questionable.

The lymphatics of the gall-bladder pass through the nodes at the junction of the neck of the gall-bladder and cystic duct and thence through those along the common duct to the receptaculum chyli. They also anastamose with those of the liver as first described by Sudler, 1901, and later by Graham, 1918, and account for the direct association of liver and gall-bladder inflammation. In the area of the common duct an anastamosis with the pancreatic lymphatics explains inflammatory extension from the gall-bladder to the pancreas.

The innervation to the gall-bladder is through the sympathetics and parasympathetic or vagus nerve. It would seem that mild stimulation of the vagus leads to moderate gall-bladder contraction and sphincter of Oddi dilatation (a contrary innervation). Lyon uses this fact to advantage in injecting concentrated solution of magnesium sulphate into the duodenum to bring about flow of bile from the gall-bladder into the duodenum. Many substances have been used both to relax and to produce spasm of the sphincter, but the time allotted to this paper will not allow of discussion of this phase. In 1922 Auster and Crohn opened the duodenum and watched for the discharge of dye and other substances from the gall-bladder after stimulation through the application to the duodenal surface of these substances. As the dye was not discharged they found ground to oppose the opinion of Lyon. However, their experiment cannot be taken as conclusive as the conditions were entirely artificial.

There are certain facts concerning the cystic duct, too, which I would like to mention. First, it is irregular in size, length and shape. It is frequently sigmoid, sometimes curved and not infrequently angulated and in a few instances straight. The mucosa of the cystic duct is thrown into spiral folds known as the valves of Heister. These valves may be present or may be absent; however, when present, there may be one or two or on the other hand, twenty odd. At times they are found even in the first quarter of the gall-bladder. They pass about the duct in a spiral manner from left to right toward the junction with the common duct. They encircle the duct sometimes half way, more frequently 2-3 of the way and sometimes wholly or even twice around. These valves undoubtedly retard the flow of bile in both directions, possibly not more in the one than in the other. The gall-bladder has been filled to a bursting tension without producing much flow into the common duct; likewise, it has been the experience of many surgeons that to empty the gall-bladder considerable pressure had to be used with some traction of the gall-bladder. It has also been found that after the gall-bladder and cystic duct had been freed by dissection, it became easy to express the contents into the duodenum. Undoubtedly this arrangement in the tube leads to easy stagnation in the gall-bladder and makes it frequently impossible to pass a probe through from the gall-bladder into the common duct as long as the gall-bladder and duct have not been disturbed in their natural relations. J. E. Sweet, 1924, expressed an opinion that when bile once entered the gall-bladder it never left by returning through the cystic duct to the common duct. This I am sure is an opinion that but few surgeons and laboratory workers can entertain.

The valves of Heister are best developed in man; found also in dogs and rabbits in lesser number and less well developed, and in most lower animals, not at all. This one fact would, therefore, declare that these are not vestigial structures. On the other hand their abundance or absence in man without other compensating adjustments would indicate that they play an important role in the functioning of the human gall-bladder.

Certain interesting observations have been made since the gall-bladder has been subjected to operative treatment for the relief of gall-bladder disease. In the first place, it has been noticed that after a complete removal of the gall-bladder and cystic duct there is a marked tendency to dilatation of the extrahepatic biliary ducts. Where the cystic duct has been only partly removed this tendency is not so marked. Deaver, however, has denied this, observing that he has not found such to be the case.

The general impression, however, is that the common bile duct and the hepatic ducts do dilate after complete cholecystectomy with removal of the cystic duct. This has been attributed to the fact that the gall-bladder is a part of the biliary duct system and when removed increases the tension in the common duct, normally relieved by the flow into the gall-bladder, and this causes the common duct to dilate several diameters. It has also been suggested that as the gall-bladder secretes a mucinous material which renders the biliary salts less irritating, the absence of this mucin causes a marked irritation of the sphincter of Oddi with contraction. This retarding of the outflow of the bile into the duodenum produces the dilatation through increased tension in the duct system. It has also been insisted that the liver secretes rather constantly and fairly regularly and that the gall-bladder not being left to act as a reservoir, the accumulation must necessarily take place in the biliary tract. From this, I think the surgeon at large will disagree. Those who have drained the common duct and the gall-bladder will recall the fact that not only did food and liquids, but the quality of the food made a difference in the discharge of bile. One cannot question the fact that the liver is functionate at all times and secretes rather steadily some bile, but the large influx of nutrient material and fluids following the digestion of food, necessarily increases the flow of bile many fold.

In the beginning of this paper, I said that the answer to the question "What shall be done with the symptom-producing gall-bladder" rests obviously upon a fairly full and rational understanding of the part played by the gall-bladder in healthful functioning of the body. Up to the present time there have been a number of generalizations concerning the function of this organ and these may be summed up as follows: First, the gall-bladder acts as a reservoir and fits the bile better for digestive purposes by concentration. It has been determined that the gall-bladder will concentrate bile about ten parts into one, or less. Secondly, as a reservoir it contracts and sends its content into the duodenum at the time of digestion. Thirdly, it regulates tension in the biliary tract. Fourthly, it acts purely as a container for bile in the fasting periods. Fifthly, it prevents an intermitting tension in the bile ducts from respiration through pressure on the liver.

I feel that this does not state the physiology of the gall-bladder in the adult individual. In the first place, the gall-bladder cannot be a reservoir. A 1½ ounce reservoir for 2 or 3 pints of bile secreted daily is necessarily out of proportion. Only a small part of this amount must find its way into the gall-bladder. It seems to be too small to care for such an amount as might be secreted between the times of eating and digestion.

Von Hangel in 1912 concludes that bile flows at all times more or less regularly without obstruction from the sphincter Oddi. However, during rest a certain proportion of bile finds its way into the gall-bladder. As a result of eating this discharges into the duodenum. This may state the matter better. It must be remembered as before that it is not the arterial but the venous blood supply to the liver from the abdomen that determines its secretory activity to a large extent.

The gall-bladder undoubtedly does concentrate bile but just why or for what purpose in the fully formed animal, is not clear. In birds, where the right hepatic duct alone empties through the gall-bladder the left secretes a bile which passes directly into the intestine. If concentration is necessary, apparently the amount of concentration is not necessary at all as for instance in the horse which has no gall-bladder.

The question of dietary has often been raised as a reason for the lack of a gall-bladder. However, the horse having no gall-bladder has practically the same dietary as the calf that has a gall-bladder; likewise the rat has no gall-bladder and the mouse has one. Evidently the question of concentration then is not directly concerned with the food of the animal.

There is no reason to believe that any noteworthy chemic alteration occurs in the bile due to its stay in the gall-bladder or its concentration. Undoubtedly the gall-bladder does absorb all of the constituents of bile and as the water element may be absorbed faster the solid contents are simply concentrated without chemic change. That this concentrated bile in the gall-bladder can serve any useful purpose in digestion seems improbable. The re-dilution of this concentrate flowing into the duodenum with freshly formed bile, would seem to indicate it plays no distinct part in digestion. If the gall-bladded empties throughout the time during which foods pass from the stomach into the duodenum, then but a little of the concentrate would be mixed with a large quantity of fresh bile. If on the other hand it is all emptied at once, it is difficult to see how it plays any peculiar part in the more or less prolonged process of emptying the stomach and mixing the chyme with the bile, pancreatic juice and intestinal juice.

It is the general opinion that the biliary acids act as a whip to liver cell activity, but there is nothing to show that these acids are changed or altered in any way by passing through the gall-bladder for they act as well when absorbed by the intestines. In both instances, absorbed either way, they will be returned through the portal circulation to the liver cells. It has been found that when the bile drains away without playing its physiologic part as after a cholecystostomy, or when daily saline cathartics have been given over some time, there is a decided depression in liver function.

A reason that might be offered for the absorption of bile through the gall-bladder rather than through the duodenum is that in absorption from the gall-bladder the constituents of the bile may pass through the lymphatics and find a different route into the circulation and to the liver. This seems improbable as the active blood circulation through the gall-bladder wall must carry off the major part of materials absorbed.

The gall-bladder receives bile readily and regulates bile duct tension to a slight degree and this is reasonably more to the point in considering gall-bladder function. The easy passage of bile from the common duct into the gall-bladder causing its thin walls to distend would relieve tension to a degree. It has been demonstrated apparently that the removal of the gall-bladder causes a dilatation of the common duct which is compensatory. It has also been shown that the common duct in the horse is relatively large, the horse having no gall-bladder. However, the dilatation in the one case and the relatively larger duct in the other does not indicate that these conditions relieve tension in the biliary duct system. In the first place, it has not been proven that the dilatation of the common duct is not the result of surgical trauma. Furthermore, there is less tendency for the common duct to dilate if a portion of the cystic duct is left. Certainly this small remaining portion of duct has not a capacity sufficient to relieve tension. The explanation of this is the traumatization of the nerve supply of the biliary duct system. In the second place, the relatively large size of the biliary duct of the horse does not of itself relieve tension. This would be a matter of elasticity of the duct which would allow it to yield under tension and dilate until the flow into the duodenum relieved this inner pressure.

Examining the function of the gall-bladder further we may say definitely that it does secrete a mucin-like fluid, a nucleo-protein. This, however, is the function of all of the larger biliary ducts. Rous, and McMaster in 1921 showed that isolated portions of duct, common or hepatic, secreted a white fluid containing some pseudo mucin. This mucinous fluid undoubtedly is protective, rendering the bile less irritating. Accrediting this property to the gall-bladder secretion it is difficult to see any other purpose in it. There is no other element in the secretion of the gall-bladder which seems of digestive or metabolic importance.

The absorbing faculty of the gall-bladder causes the biliary salts, cholesterin and bilirubin to be taken up. It is true that the bile salts and cholesterin may serve some useful purpose in further metabolic or secretory activity but it is difficult to understand why these substances taken up by the gall-bladder are of greater value than when taken up by the duodenum. The assumption that the absorption of them through the gall-bladder plays a vital or consequental role, is not borne out by the experience of the surgeon who has removed gall-bladders.

That the gall-bladder should play a functionate part throughout the life of an individual seems to be contradicted by the fact that as age advances retrogressive changes are noticed in this organ. Inflammatory processes become more and more noted and old age is the age of gall-stones, very frequently of the symptomless variety.

No one has ever recorded any effort at readjustment in bodily function to meet an inactive gall-bladder or one that has been lost. The nearest approach to this was the observation of Rost that the pancreatic and biliary secretions are lessened in dogs after cholecystectomy. This observation, however, is open to some question and cannot be taken as final.

A most interesting matter is being worked out at this time by several investigators, abroad and in this country, on the source of vitamin D, the anti-rachitic vitamin. A. F. Hess records that the action of the ultra-violet ray on cholesterol and the sterols of plants produces this vitamin D. Irradiated cholesterol becomes very potent so that 1-1,000,000 of a gram is sufficient to protect a rat from rachitis. Hess and Windaus of Goettinger have found that only a small part of the cholesterol however, is activated, namely ergosterol. This product is found very largely throughout the vegetable kingdom. They have found that 3-10,000 of a milligram per capita daily will bring about the healing of the bony lesion of rachitis. Whether the gall-bladder might play any part in the development or use of this lipoid substance or not, is difficult to say but practical results would certainly indicate that it does not.

To sum up matters pertaining to the gall-bladder, it may be said that it can be removed and occasion no disturbance in the human body through its absence. If it does play a part in the adult body it is certainly compensated for by readjustments we know nothing of.

Through the facts related in the foregoing paper, one suggestion comes strongly to mind. It is that the gall-bladder plays its chiefest role in the embryo and up until it reaches complete development. It will be remembered that the liver essentially stands between all nutrient materials reaching the foetal circulation and their final use in the tissues of the body. Is it not possible that for active liver functioning in the foetus the pace-making biliary salts must be taken up in the gall-bladder where resorption occurs so readily, rather than from the duodenum where, through the lack of food and liquids, absorption may be very poor and slow. The early development of the gall-bladder and its relatively large size in the embryo, would indicate that it performs a function at that period somewhat consequential. I suggest that this resorptive faculty of the gall-bladder in the developing embryo stimulates the liver to its continuous task of taking care of this fundamental step in metabolism. After the child is born the food and liquid stimulation in the duodenum renders the gall-bladder less necessary. It, however, being developed and serving the purpose of an absorbing reservoir may very well continue accepting of the bile flow as it had in the embryo. There is no reason for early atrophy in the gall-bladder after birth for it may continue to function even though not with material usefulness.

All things summed up, I would like to express the opinion that the gall-bladder is practically unnecessary in the adult body and if it becomes the seat of disease, its complete removal is logical. I have not time to discuss those cases in which cholecystostomy affords an immediate advantage, nor those in which, through obstruction of the common duct, cholecystgastrostomy and cholecystduodenostomy are the operations of choice. Nor would it be in harmony with the paper read to consider operative technique in removal of the gall-bladder. I must say in closing that this opinion savors of scholasticism and while plausible and somewhat alluring, it is based upon incomplete observation and insufficient experimentation.

THE DIAGNOSIS AND TREATMENT OF STERILITY IN THE FEMALE

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A great deal of time and thought has been given to the care of the expectant mother, by the laity, the medical profession, the state and national government. Not as much attention has been paid to the unfortunate woman who complains of sterility. Many divorces have been granted on these grounds, and the medical profession should give this type of patient more scientific care. How many times has this unhappy woman consulted a doctor, to receive but a cursory examination with the advice "to go back to her husband and everything will work out the way she had expected". Yet, few matters more germane to growth and vigor of the community, affecting a tenth to a sixth of its marriages, could claim a better right to coordinated effort in tabulating well studied material.

In the first place, a thorough pelvic bimanual examination should be made to determine any deviations in the position of the uterine body, or the presence of any adnexal masses. If this routine pelvic examination is negative, even after a speculum examination has been made, and the reaction of the cervical secretions tested, (they should be alkaline for the existence of live spermatozoa), the patient should be instructed to bring her husband in for an examination. If no gross lesions are present, in the male genitalia, the couple should have intercourse in your office, and the spermatozoa should be aspirated from the vaginal vault, and examined immediately under the microscope. If this is unpleasant to the patient, a condom specimen may be brought from the home within a half hour after intercourse, and the sperm cells tested, as above described. In giving instructions to the patient about bringing this specimen, you should tell them to knot the top of the condom, suspend the same in a small jar containing lukewarm water, and bring the same, as soon as possible to your office. To rule out the male element in this unfruitful marriage, the absence or presence of live motile spermatozoa should, of course, be determined before any further examination is made of the female. The gynecologist and the urologist are, therefore, called on to start a new statistic. It will distinguish between voluntary and involuntary sterility. It will, before even examining the woman, evaluate the male.

As Dickinson(1) has shown in 1,763 reported cases of sterile unions in which the semen has been directly examined by twenty-eight observers, the average proportion due to poor semen stands at 31.25%. In the longest single series, that of Hunner and Wharton(2), covering 279 men, the defective semens are 20%. Dickinson shows 12% azoospermia, plus 31% poor; Cary(3), 11% azoospermia and 27% deficient and poor. As a urologist, Read, in 253 cases, found 23% azoospermia. We may justly infer from the foregoing, that *the male is to be credited with at least one-third of the sterilities.* It is plain to see then that gynecological treatment should not be undertaken until the fertility of the male is established. Cooperation of both husband and wife must be assured before suitable conditions could be provided for complete study, and diagnosis and proper treatment instituted. Any tubal testing, treatment or operative procedure for sterility that is done on the wife, before the present condition of the husband is determined, should in these days carry the stigma of malpractice.

THE RUBIN TEST

It is the purpose of this article to describe a simple, effectual, and definite means at our disposal for determining whether or not the female is at fault. This examination can be carried out either in the office or at the hospital, preferably in the latter institution. The patient should be given a soap suds enema and be catheterized, and placed on the examination table in the lithotomy position. The external genitals should be scrubbed with soap and water, and the cervix painted with mercurochrome or iodine. No anaesthetic is necessary, but a 1/6 of morphine and 1/100 scopolamin can be administered a half hour before examination.

We are now ready to test the patency of the Fallopian tubes. A knowledge as to whether or not the tubes are open is imperative in all these cases. The simplest procedure is the so-called Rubin test. The cervix is grasped with a single toothed tenaculum forceps and a uterine sound introduced to check up on a retrodisplaced or an acutely anteverted uterus. Then the Key's Ultzman's cannula is introduced into the cervix past the internal os. This canula is connected up with a commercial tank of carbon dioxide, as illustrated in the accompanying photograph. (Fig. 1). This tank is equipped with a pound pressure gauge, and a millimetre gauge of the ordinary Tycos blood pressure type. The gas is then turned on and the rapidity of the flow is noted by passing the same through a wash bottle. If the Fallopian tubes are patent, this gas will pass into the abdominal cavity under a pressure of less than 200 millimetres. As the gas flows through the female generative tract, the pressure will gradually fall, and the patient complain of a bubbling in the lower abdomen and very soon a pain under the diaphragm, and still later, a slight pain in the shoulder region. This is one of the most conclusive proofs that the tubes are open. A doctor may also hear the gas bubble into the lower abdominal cavity by placing a stethoscope over either the right or the left lower quadrants of the abdomen. The percussion note is also changed as it becomes more tympanic.

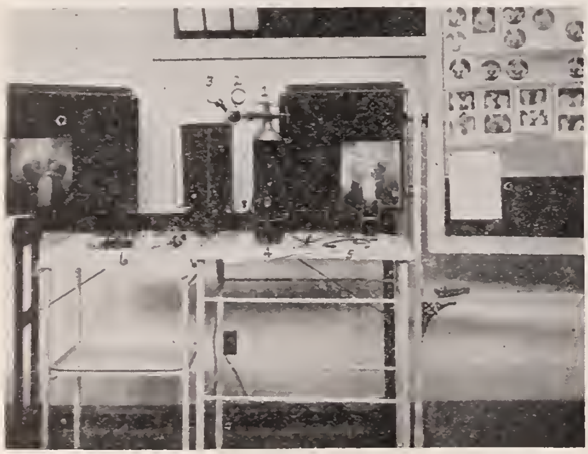

FIGURE 1.

Apparatus for the Rubin test and the injection of the iodinized oil:
1. Commercial tank of carbon dioxide gas.
2. Pound pressure gauge.
3. Millimeter gauge (Tycos).
4. Wash bottle.
5. Key's Ultzman's syringe with rubber tip which acts as a plug against the external os.
6. Necessary equipment for the injection of iodinized oil: 5% mercurochrome; luer syringe and cannula; tenaculum forceps; uterine sound; uterine dressing forceps; Groves bivalve speculum; cotton balls or gauze.

If, however, the Fallopian tubes are closed, or there is any obstruction from the cervix to the supposed fimbriated end of the tube, the gas will not pass through under a pressure of 200 mm., and no greater pressure should be used.

THE USE OF IODINIZED OIL INJECTED INTO THE UTERUS AND TUBES WITH AN X-RAY PICTURE OF THE FINDINGS

To enable the patient and the doctor to see the site of obstruction, the following graphic checkup should be made. This is done by the use of iodinized oil. Five to 10 cc. of iodopin or lipoiodine are injected through the Key's Ultzman's canula by means of a 10 cc. Luer syringe. This fills the cavity of the uterus and tubes, as far as the site of obstruction, or if there is no obstruction, the excess will escape through the fimbriated ends of the Fallopian tubes, and appear as a small pool in the peritoneal cavity when the x-ray picture is taken. The patient is left in the same position as she was in for the Rubin test, with the exception of placing a Buckey diaphragm underneath her pelvis, as a better picture is taken by this technic. The x-ray picture is then made immediately after the oil has been slowly injected, and it can be developed within five minutes. The patient can then see where the pathology is present.

The only instruments needed for this examination are:

1. A bivalve speculum.
2. A uterine dressing forceps to clean off the cervix with iodine or mercurochrome.
3. A single toothed tenaculum forceps to steady the cervix.
4. A 10 cc. Luer syringe connected to the Key's Ultzman's canula. (See the accompanying photograph) Figure 1—No. 6.

The patient and doctor can then view the x-ray picture and see immediately the site of the pathology. You may see in Figure 2 how the constriction at the distal portion of the left tube appears when there is an obstruction. The right tube in this instance was open, as shown in the picture, the most distal shadow being an excess of lipoiodine free in the pelvic cavity.

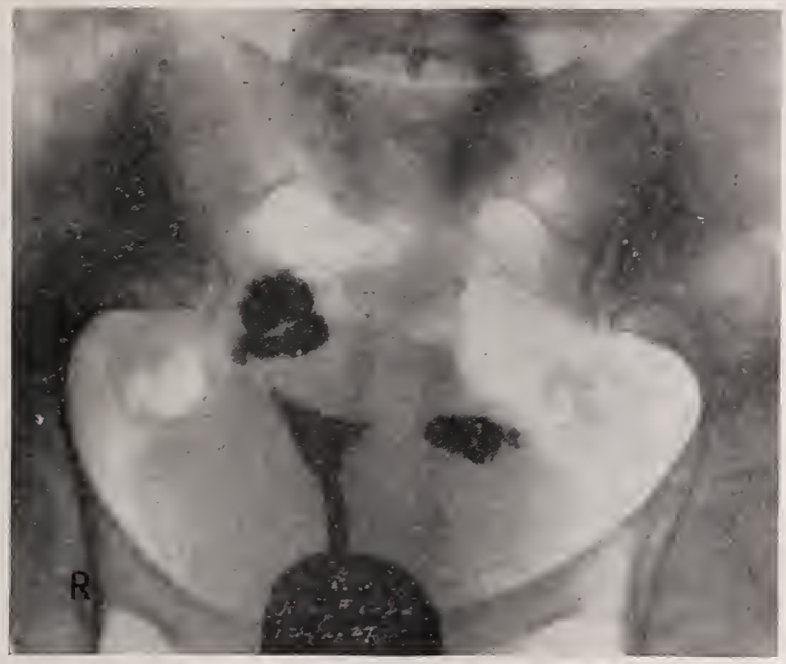

FIGURE 2.
Right tube patent, excess of lipoiodine; left tube dilated, fimbriated end constricted.

Mrs. E. R., aged 45, clinic No. 34888, x-ray No. 1226. Patient has had 2 children and 2 miscarriages. 1921 had an anterior suspension operation, pelvic abscess drainage through the abdominal wall. Patient is having menopause now, has not flowed for 5 months, and has hot flashes.

Pelvic examination shows a fixed retrodisplaced uterus pulled to the right. X-ray picture after the injection of lipoiodine shows that both tubes fill with radiopaque substance, but that the left tube is clubbed at the end and constricted at the end as if a ligature had been tied around it. Right tube is patent and there is an excess of lipoiodine in the pelvic cavity.

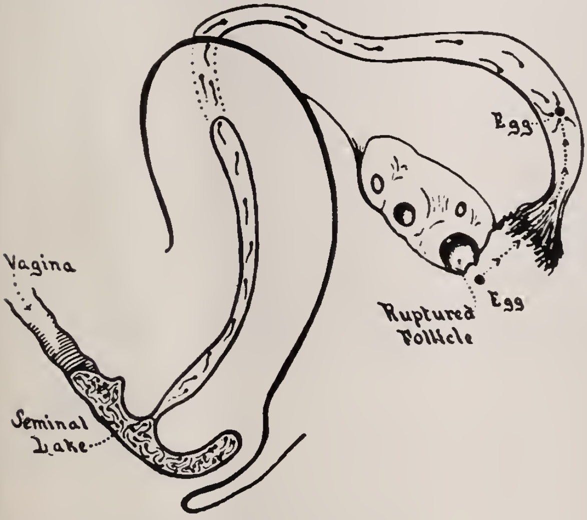

FIGURE 3.
Schematic outline of generative tract showing: Escape of ovum, penetration of spermatozoa, fertilization of eggs.

THE PHYSIOLOGY OF REPRODUCTION

Figure 3 will illustrate the physiology of reproduction. Fertilization consists of the union of the spermatozoan and the mature ovum. The maturation of the ovum consists essentially in the reduction of the original number of chromosomes by one-half. This is accomplished after the second polar body is cast off. The mature ovum is now ready for normal fertilization or the introduction of the paternal chromosomes.

At each ejaculation millions of spermatozoa are deposited in the vault of the vagina. (Lode estimated 226,257,900).

Each active spermatozoid measures less than half the diameter of a single red blood corpuscle.

The place of meeting of the ovum and the sperm cells is in the Fallopian tube, the sperm cells being aspirated into the uterine cavity perhaps at the time of the orgasm or by making their own way by means of their own motile power. It has been estimated that the sperm cell can travel one centimeter in 3 minutes.

Fertilization of the egg cell then takes place in the Fallopian tube—and it probably takes 7 to 9 days for the impregnated egg cell to make its way into the uterine cavity where the chorionic villi will attach the blastodermic vesicle to the uterine wall—the particular part of the attachment being called the *decidua basalis.* According to Grosser the segmenting human ovum does not become implanted in the uterine mucosa until nine days after fruitful intercourse. No one has as yet seen a human ovum in the process of implantation but it probably occurs by the digestive action of the tryptic ferment which the human foetal ectoderm contains.

PATHOLOGICAL FACTORS PRODUCING STERILITY

Figures 4 and 5 show some of the abnormalities found in the female generative tract which cause sterility, such as an infantile uterus; long stenotic cervix; acute anteflexion; submucous or interstitial fibroids; atrophic ovaries; perioophoritis preventing rupture of the follicle and escape of the ovum; salpingitis closing off the fimbriated end of the fallopian tube preventing the entrance of the mature ovum.

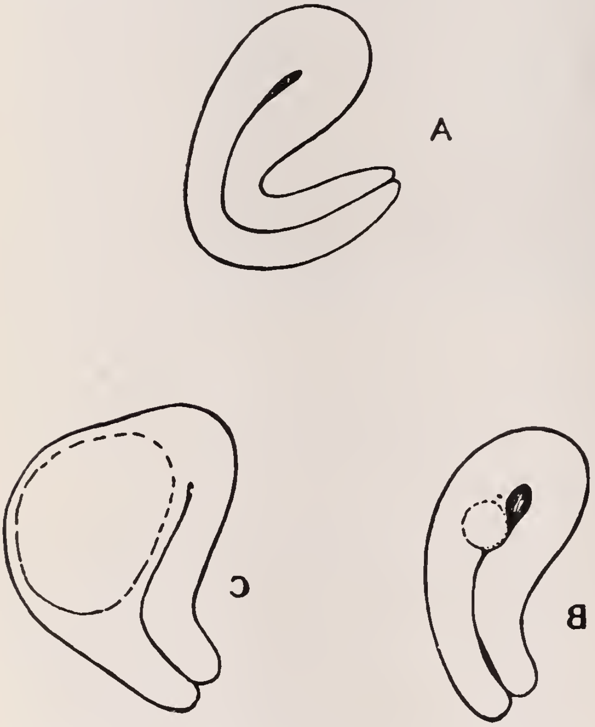

FIGURE 4.
Diagramatic outlines of uteri showing various causes of sterility.

A. Infantile type of uterus, cervix long and stenotic with acute anteflexion causing obstruction.
B. Submucous myoma causing obstruction or interference with nidation.
C. Interstitial myoma causing the same.

"Many factors may contribute in part or in whole to the tragedy of an unfruitful marriage. In the male, the absence or poor quality of the spermatozoa, defective anatomy, and pathological conditions which destroy the spermatozoa either before or during the ejaculation have been mentioned. In the female, the spermatozoa may be destroyed in the vagina or after reaching the cervix or even the uterus, or ovulation may be defective or absent entirely. Of fascinating interest is the histological study of the spermatozoa, the process of ovulation and fecundation, and the vaginal and uterine secretions and their bearing on sterility. Along this line the work of Reynolds, Lespinossi, Huhner, Detlefsen, and Rohleder deserves the greatest praise, and these should be read in full in order to gain a clear understanding of the details and technical methods used."(7)

Figure 6 illustrates a patient whose possibilities for becoming pregnant are reduced 50% due to an occlusion of the left tube. The Rubin test showed the right tube patent as the legend under the illustration will explain. Likewise, after the lipoiodine injection, the right tube filled with the radiopaque substance but none is seen in the left tube. This procedure graphically explains, to both patient and doctor, where the pathology is present.

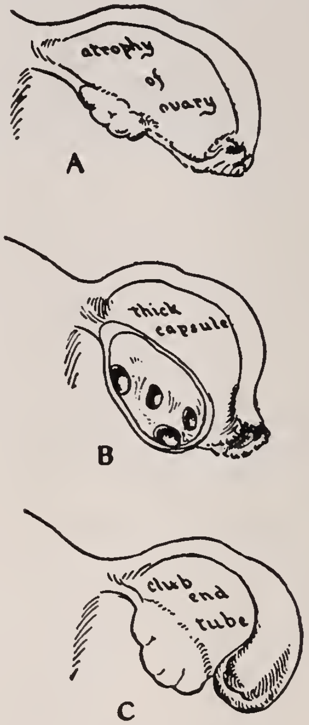

FIGURE 5.

A. Atrophia ovary, no ova produced.
B. Thickened capsule (perioophoritis) preventing rupture of the follicle and escape of ovum.
C. Abdominal ostia of tube closed preventing ovum from entering tube.

Figure 7 and 8 illustrate incurable cases of sterility. As subsequent figures will show, the most optimistic reports average one chance of success in seven in relieving such conditions.

Figure 9 pictures an infantile uterus with patent fallopian tubes. These patients have associated with their uterine underdevelopment; periods of amenorrhoea, ovarian dysfunction, thyroid dysfunction, and comprise a large class of the women complaining of sterility. In Dickinson's series 25% of his patients showed underdevelopment with ovulation defective or entirely absent for months at a time. Glandular therapy is sometimes of value and fractional doses of x-ray over the ovarian regions have been used with gratifying results(8).

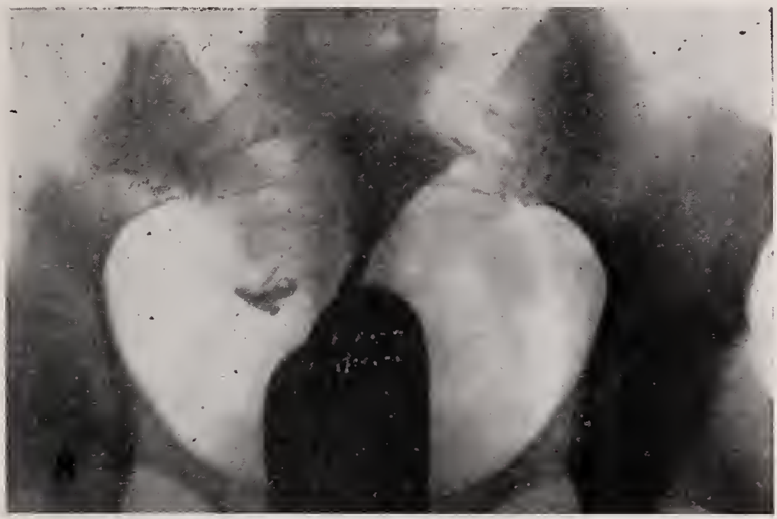

FIGURE 6.

Right tube patent. Left tube occluded.

Mrs. B. C., aged 23, married 1½ years, came in complaining of sterility. Husband's spermatozoa motile. Five years ago, husband had gonorrhoea. Pelvic examination shows uterus small, forward, movable. Left tube and ovary palpable. Right adnexal region negative. Rubin test performed and patient had pain in ;r. l. q., later in right shoulder. No pain on left side. Gas passed under a pressure of 120 mm. Check up after injection of 7 cc. lipoiodine showed the above. This patient then has half the chance of becoming pregnant as compared to the possibility if both tubes were patent.

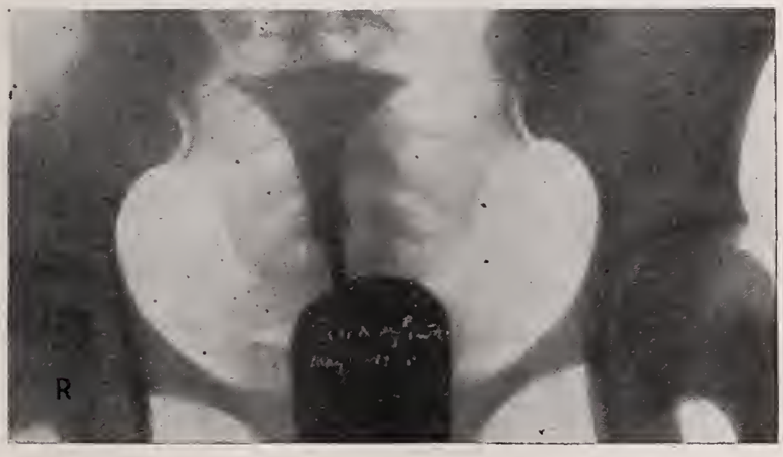

FIGURE 7.

Illustrating closure of both Fallopian tubes.

Mrs. O. J., clinic No. 38060, x-ray No. 1254, aged 22. Had one child four years ago. No miscarriages. For the last 2½ years has been using no contra ceptive measures, and has bad intercourse at least once a week. The x-ray shows why she has not become pregnant, as both tubes are closed at the fundal insertion. Note constriction at right corner. Patient is sterile. 8 cc. lipoiodine injected.

Other constitutional and local causes associated with or causing sterility are as follows:

1. Obesity—Brothers series, 4% of obese sterile women.

Kisch(4) series, 21% of obese sterile women (215 women).

Dickinson, 61 cases, only 4 women in obesity group as sole cause of sterility.

2. Amenorrhoea and defective development — 25% of women in Dickinson's series. Cary had 33% cures in the under development cases in which class he put:

Underdevelopment.
Anteflexion.
Habitual amenorrhoea.

Dickinson had 37% cures in same type of cases.

Anteflexion.

Stenosis and infantilism.

3. Appendicitis and closed tubes.

Dickinson, in 362 sterile women, found a history of appendicitis in 16.3%.

Cary, in 140 sterile women, found a history of appendicitis in 15.7%.

4. Salphingitis (the most common cause of sterility —39%).

Gonorrhoea, the cause in half of Cary's series.

Induced abortions, ectopics, intra-uterine stems—54%.

5. Fixed displacements and dense adhesions blocking the Fallopian tubes (26%).

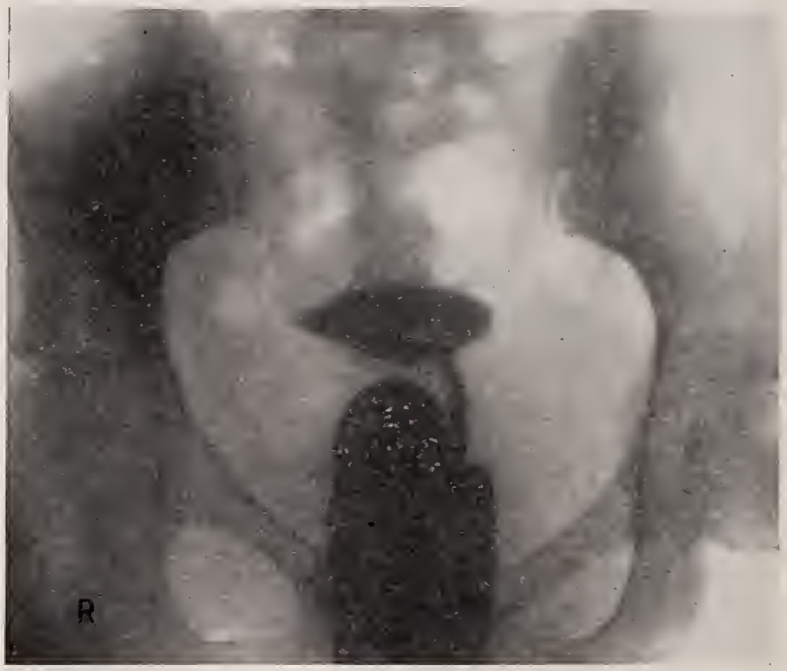

FIGURE 8

Illustrating Sterility.

Mrs. E. T., aged 28, clinic No. 23126, x-ray No. 1244, is a deaf mute, who had diphtheria, measles, pertussis and chicken pox. Has two living children, last child born dead. May 12, 1926, 1 year ago. Patient had infection after birth of last child.

Pelvic examination shows uterus forward, trifle enlarged, left tube and ovary palpable. Right adnexal region negative. Patient wants to know why she does not become pregnant.

X-ray picture shows uterine shadow after lipoiodine injection, but no iodinized oil in either tube. Diagnosis, sterility.

Amenable only to surgical pocedures—not satisfactory.

Retroversion per se occurred as a complication in 18% of sterility cases—(Cary's series).

6. Endocervicitis: Mucous plug in the external os preventing the passage of the spermatozoa. Rare instances when a supervigorous semen successfully penetrates the abnormal secretions of the cervix are exceptions, which add rather than detract as indications of the value of the study. Migration of normal semen seems influenced solely by the condition of the cervical secretion, lacerations, cysts, fibrosis of the cervix playing minor roles.

7. Atrophy of the Ovary—No ova produced. See A. Figure 5.

CURES

Curability ranges with the woman in the care of representative gynecologists, are from one chance in seven with closed tubes; to one in three in more favorable conditions. With careful selection and by persistence in treatment, Dickinson and Cary feel that better results may be obtained. Thus we may be able, after eliminating the grossly incurable, to eventually relieve one-half of the sterile unions.

Concerning the curability of particular conditions producing sterility, there are some figures to be found in the literature, based on the observations of some 2000 women sterile from various causes.

1. Percentages of success given for salpingostomies performed by nineteen operators range from Halban's zero; Pozzi's 3.3 and Polak's 6.3% of successful operations to Delbet's and Solomon's 47%. Omitting Solomon's figures, the one extreme, and taking the figures of 18 operators—we read the average of 14% or one chance of success in seven.

2. For retroversion, Giles(5) 5%, Hunner-Wharton 25%, Polak's(6) 55.6% success.

3. Anteflexion, Brickner in 42 Dudley posterior lip-splittings 31% of success; F. C. Holden 27%.

4. Stenosis, Hunner—35% in 55 cases.

Pozzi and Barnsby report 170 lateral splits—31% success.

Jacquet—79 cases, like procedure, 60% success.

5. Myomectomies—Engstrom had cures in 26.4%.

Essen Moller, 10%; Hunner in 27%; Polak in 33%.

6. Amenorrhoea with long gaps—Rubin reports 10 cases treated by stimulative doses of x-ray (1/3 the castration dose), and has 75% cure.

7. Distention of closed tubes by gas, air or fluid—Peterson reports 13 pregnancies in 36 patients answering letters, or 33%.

SUMMARY

1. More scientific care should be given the patient complaining of sterility as few matters are more germane to growth and vigor of the community affecting from one-tenth to one-sixth of its marriages.

2. The male should first be evaluated in these unfruitful marriges. The best available statistics show that the male is to be credited with at least one-third of the sterilities.

3. Gynecological treatment should not be undertaken until the fertility of the male is established.

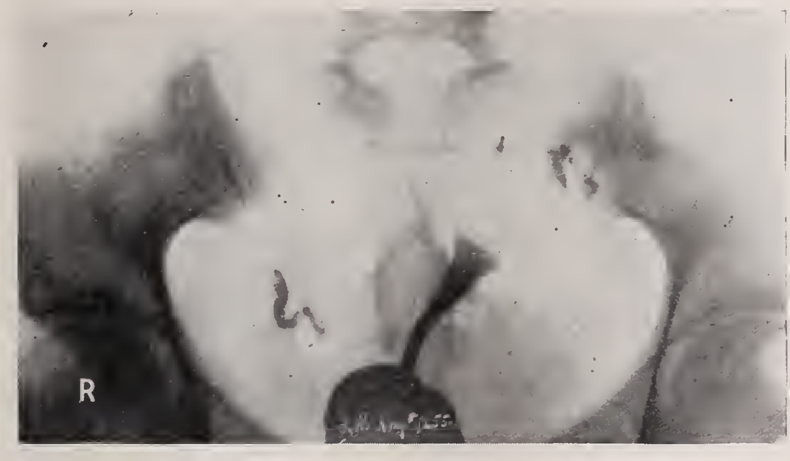

FIGURE 9.

Normal uterine shadow and patent tubes.

I. W., aged 19, clinic No. 37313, x-ray No. 1255. This picture illustrates a normal uterine shadow and patent Fallopian tubes, even though the patient has contracted gonorrboea three months ago. She complained of a vaginal discharge for over one year. Patient also had a four plus Wassermann. Pelvic examination shows small uterus, forward, movable, left tube and ovary palpable. Both tubes patent.

4. Any operative procedure on the female that is carried out before the patency of the tubes has been tested, should in these days carry the stigma of malpractice. Employ the Rubin test.

5. Graphic demonstrations of the site of pathology or occlusion in the female generative tract can now be made by the x-ray after the injection of iodinized oil, as the accompanying photographs will show.

6. Both the Rubin test and the use of 40% iodinized oil are simple tests which any doctor can use safely, if he employes aseptic precautions.

Note: I wish to thank Dr. J. S. McAvin and Dr. Elmer M. Hansen of the X-ray Department of the University Hospital for the excellent pictures they have taken of thirty of these patients.

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"AM I MY BROTHER'S KEEPER?"*

MORRIS NIELSEN, M. D.,
Blair, Nebraska.

We are all familiar with the circumstances that first prompted this age old question and the mental make up of man has changed little if any since that time. We are constantly confronted with some overt act that we are ashamed of, and we try to justify our actions with the above question. When we have done wrong we know it, and deep down inside of us we feel it, and no matter how we try, we cannot derive any comfort by trying to evade the issue. We are equally responsible for ourselves as well as for the other fellow. What our profession needs as much as anything is sincerity and straightforwardness—there is too much politeness. How often do we give an honest answer to our fellow physician when he asks our opinion, if the truth is going to hurt him? We forget in our zeal for his welfare, that we are perhaps doing a greater harm by denying him the truth.

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*Read before the Nebraska State Medical Association, annual meeting, Lincoln, Nebr., May 11, 1927.

Character is the foundation of manhood. While our reputation may be in the keeping of the mouths of the people as a whole, it is certain that our character is in our own keeping. We must remember that character cannot be injected into another, but must be caught or acquired. It is, therefore, necessary that we look carefully to our own conduct.

We are responsible to our patients for their welfare and no matter how trying is their ignorance, we have no right to relinquish our efforts in their behalf. The same is true of our conduct in dealing with our fellow practitioner. The young doctor may sometimes look askance at the older man, who lacks many of the modern diagnostic methods, but who nevertheless manages to do a great deal for his patient by reason of his many years of experience, his powers of observation, and his canny interpretation of what he sees and hears and feels. This knowledge can only come after many years of close application, and the young doctor may well be considerate of the older man, that he may be inclined to convey some of this to him, that would otherwise take years to acquire for himself. We should be considerate of our competitor and when he is assailed by adversity we should come forward with help and encouragement, for the time comes, sooner or later, when we ourselves will need help. It is often amusing how some fellows will say they will help, and then when the time comes, they have either changed their minds, or their jealousy prompts them to withhold any help they could have given, and try to console themselves by asking "Why should I get into it?" "I'm not interested". I am giving them credit however for feeling pretty cheap about it, for I don't believe they sleep well for some time.

Have you ever noticed how certain fellows left others to shift for themselves when afflicted with a malpractice suit, that later came to you for help when they were involved themselves? I have, and I have helped such fellows, but I am human and rubbed it in, just a little bit, by asking them if they did not now believe me when I said that sooner or later we all need help.

Civilization owes its progress to organization. Without organized and well directed effort there is nothing that can advance. The recognition of this truism is responsible for our wonderful *Nebraska State Medical Association,* as well as the fact that the men who founded and developed it to its present high state of efficiency also realize that we are truly dependent upon each other. It took courage to start such a movement, which is exemplified by the saying that anyone can plant radishes, but it takes courage to plant an acorn and then wait for the oak. Our officers are men who are making a sacrifice, in order to carry on the work of our Association, and every member owes it to the organization to co-operate with every officer in the performance of his duty. This is true if only for selfish reasons, and we must remember that our individual make-up reflects itself in our Association.

Our organization could not function efficiently without a head, and a few men composing units that have a definite duty to perform. Were we to try to govern our affairs as a body, it would result in an awful mess. The more people involved in carrying out a definite pursuit, the greater the chaos. If you don't believe it, look at Congress. Moses wrote the ten commandments all by himself.

Have you ever considered that the world's greatest works were accomplished by individuals? It was a sense of responsibility toward their fellow men that prompted all of these great acts, for most of them yielded little of material value to the individual, but was of untold benefit to humanity. Were it not for the universal knowledge that we are responsible for each other, what would our present day existence be like? We would in all probability be governed by a set of laws that would make life almost intolerable. While all law is not necessarily justice, we must not forget that we must have definite laws to observe in order that we do not encroach upon the rights and privileges of others. These laws should be sane and constructed from an educational standpoint, so that the individual will take pleasure in observing them. No law is stronger than the sentiment behind it. No great movement begins with law—it commences with education. Forces do not threaten, they operate. Education is a force, law is only a threat; it operates successfully only when backed by public opinion, and public opinion is the fruitage of education. Therefore, we must educate each other according to our ability whereby I may get something that you know, and in return you may get something that I know.

We are responsible to our patients in that we must teach them what is to their best interest, and tell them how to live, and how to help the other fellow to live, so that the race may advance and build up rather than decay and fall down. When you consider that the life of a Nation depends entirely upon the state of health of its people, who is better qualified to be of service than the physician? We cannot escape the inevitable, it is our heritage that we must look after the other fellow. People look to us for help when they are in trouble and for relief when they are in distress.

It is truly remarkable how the people come to depend upon the physician, and it is a fact that they will go to their doctor with problems that they will hesitate to bring to their priest. You will have the worried parent with the wayward boy or girl. You will be asked to talk to them and try to bring them to a sense of realization of whither they are drifting. You will be brought into the most secret recesses of life that no other mortal will be permitted to enter. People with domestic difficulties will consult you, and you will sometimes be at your wits end as to what to do or what to say.

When a minister is called to the home of someone, it is usual that the furniture is dusted and arranged in a pleasing manner. The folks all dress up for the occasion, and the stage is all set, so to speak, but when the physician is called there is neither time nor the inclination to be other than natural. Thus the doctor gets much closer to his people and he sees beneath the veneer of civilization and of pride just what they are.

When Jenny goes off to the city to become a part of a great metropolis and due to her inexperience and trusting nature meets with misfortune and comes back home, broken in spirit, perhaps pregnant, with the local distributors of bad news saying with a leer, "I told you so", and when people as a whole shun her, the doctor comes forth with kindly and constructive advice, and is a pillar of support during the trying period before her.

When the boy leaves home and through evil influences and bad associates comes home broken in health by reason of a luetic infection, it is the doctor who comes to the rescue with his encouragement and offer of help. He points out that while it is distressing indeed, it is not an altogether hopeless outlook, and gives wholesome instruction how to overcome the situation. This he does in a spirit of friendliness, without thought of personal gain or aggrandizement. He puts his hand on the shoulder of the weeping mother, and on the father, who while saying little feels much, and tells them what a wonderful thing it is that their children felt they could come home when they were in trouble, in the full confidence that mother and father offered a haven of refuge when all other ports were closed to them.

Remember that you cannot live to yourselves alone and be happy, as it is only by giving that we attain happiness, for it is certainly true that whatever we put into our lives, that is exactly what we get out of it.

Consider the young folks especially. Do you remember when you were a youngster what a real pleasure you derived from the interested attention of a grown man? Can you not even now recall some incident of such kindly notice, that made brighter the whole day? Well, they are still the same; and they are affected and influenced today by the same things that reached and warmed your young heart. They still respond most generously to those little attentions that bespeak a real sincerity of interest in them as recognized individuals and not merely as "kids". On the other hand, every man who spends a few moments in pleasant contact with a boy, thereby regains a little of his own youth. It is the nearest known substitute for the fabled fountain. I have always thought that by looking at the wrinkles of a person's face I could tell what his temperament and his disposition would be like. Yet in these days of face lifting, I am not so sure.

At any rate we are repaid in kind for whatever we do, and we have gradually reached a stage in which knowledge, when translated into action, is made helpful for suffering humanity, just as the great discoveries in physics and chemistry have been made useful in the advance of civilization. If, in the memorable phrase of the Greek philosopher, Prodicus, "That which benefits human life is God", we may see in this new gospel a link between us and the crowning race of those who eye to eye shall look upon knowledge, and in whose hand nature shall be an open book.

It is not too much to ask of us that we give more consideration to others of our profession than we have given in the past. Our competitor has the same problems that we have; the same disappointments and obstacles to overcome, so why not try to help him that he in turn will be inclined to help us. Let us get acquainted with him, we may like him.

Do not misunderstand me please, I do not infer that it is only the medical man who should be cautioned, for most everybody has shortcomings, and in my opinion the physician has the least.

But be that as it may, human nature is really kind at heart if properly stimulated, for we have all met in sick rooms with experiences that have greatly increased both our interest and our confidence in man. We find the young and vigorous denying themselves many pleasures in order to brighten the pathways of the old and infirm, the fortunate lending a helping hand to the unfortunate, and the wise leading the unwise. Strength and weakness are relative terms, and those possessed of the former must help bear the burdens of those afflicted with the latter. This the physician has always done, and I am proud that I belong to a profession that does not have to hang its head and evasively ask, "Am I my brother's keeper?"

CONGENITAL DISLOCATIONS OF THE HIP*

JAMES W. MARTIN, M. D.,
Omaha, Nebraska.

Though it may seem platitudinous to state that a severe congenital deformity which is correctable ought to be corrected early, experience proves that it is necessary to remind ourselves occasionally of this fact. And particularly in the case of congenital dislocation of the hip should correction be done early. This deformity is one which, if uncorrected, becomes extremely disabling in later years, and yet it is a deformity which may be entirely corrected in a high percentage of cases if operation is performed at the proper time.

The diagnosis of the condition is usually so apparent in the child who has begun to walk that there is no need to discuss this phase of the problem. Hence, I will proceed at once to the matter of treatment.

First of all, how early should reduction be performed? Some diversity of opinion exists in this regard. Theoretically, correction of a congenital deformity should begin a few days after birth. Practically in the case of congenital dislocation of the hip I prefer to wait until the end of the second year. By this time the muscles have become strong enough to assist in maintaining the reduction, the child is old enough so that feeding is not a difficult problem, and in many cases the child has learned to control the bladder and rectum. Even though the child has not learned to make his wants known in regard to the latter matter, I do not hesitate to start treatment, provided the general physical condition of the child is good, and that the parents may be counted on to carry out instructions. I never begin treatment in these cases without explaining to the parents or guardians that much patience and perseverance will be needed, and I strive to impress upon them the fact that the after-treatment is much the greater part of the task.

The choice of the particular method of reduction should depend upon the requirements of the specific case. The same principle that guides us in the treatment of fractures is applicable, that is, closed reduction is preferable to open reduction if it will give us the desired result; but there are cases in which open reduction is clearly indicated, and unless this fact is recognized, much time and energy will be lost, and end-results will be poor. A brief review of the history of the treatment of congenital dislocation is interesting. Though the deformity has been recognized since Hippocratic times, the first recorded attempt at reduction on the living subject appears to have been made by Humbert not quite one hundred years ago. Paci, in 1888, demonstrated that reduction by manipulation was possible, and his work may be taken as the starting point of the period of modern treatment. Lorenz, whose name is inseparably linked with our subject, did not invent (if we may use that word) the reduction by manipulation, but he made a very valuable contribution to our science by his insistence on the necessity of retention of the reduced hip over a considerable period of time. In the same year that Paci brought forth the closed reduction, namely 1888, Pogi performed open reduction, but just as Lorenz gave us a method which made manipulative reduction effective, it was Hoffa who gave us the first systematic technic for the open reduction. It is significant that during the past forty years, the pendulum has swung far to both sides and has but recently come to a more middle point. Open reduction was at first very generally condemned, and closed manipulation held to be the only method; next the advocates of the open method of treatment gained by far the greater numerical strength, and manipulation was decried as unsound; and at present it is the consensus of opinion that the closed method is distinctly preferable, though in certain instances open operation is necessary.

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*Read before Nebraska State Medical Association annual meeting, May 10-12, 1927, at Lincoln.

The technic of the closed reduction differs somewhat in the hands of various surgeons, but the specific technic used is not a matter of much importance provided a reduction is obtained without serious trauma to the parts involved. I prefer the Denuce method because it involves the minimal trauma to the femoral head and to muscles. The child lies on his back, with the pelvis steadied by an assistant. With knee flexed, and the thigh not too forcibly abducted, the adductor muscles are stroked with the ball of the hand from the pubic bone toward the knee. This gentle stretching of the adductors must be persisted in until the lateral side of the knee may be readily placed on the table (that is, in the frontal plane of the body) with the thigh flexed at ninety degrees. Reduction is then performed as follows: With knee flexed, and thigh completely flexed on trunk, the knee is carried toward the opposite axilla by one hand of the operator while the head of the femur is lifted up or pulled forward by the operator's other hand. Next, with firm pressure exerted on the knee in the longitudinal axis of the thigh, circumduction is begun, one hand still lifting the head or greater trochanter forward, and steering its direction as much as possible. Circumduction is continued until the knee touches the table with the thigh in ninety degrees flexion. After testing the stability of the reduction, we apply the cast. The exact position of immobilization may vary somewhat, being dependent upon the element of stability. Usually the thigh is abducted ninety degrees and flexed ninety degrees, and the knee flexed ninety degrees. The plaster extends from slightly below the nipple line to the toes on the involved side, and to just above the knee on the unaffected side. A roentgenogram is made through the cast a day or two later, to be certain that the head is in the acetabulum. The patient usually remains in the hospital one week, and does not return until a new cast is needed. With ordinary care a well-made cast will last at least four months. The nursing care of the child in the cast is not difficult, even though the child has not learned to control bladder and rectum. The child is placed on a narrow Bradford frame with an opening in the middle, the edges of the cast are bound with some waterproof fabric, a small apron or shield of similar material may be fastened to the cast and hung in front of the urinary opening to deflect urine into a pan kept in the bed below, and feces may drop directly into the pan. I am mentioning these details because I am aware of the evil reputation plaster casts have in some minds. It is not at all impossible to keep a cast clean and effective if ordinary care is exercised. The Bradford frame should be made to fit the child's

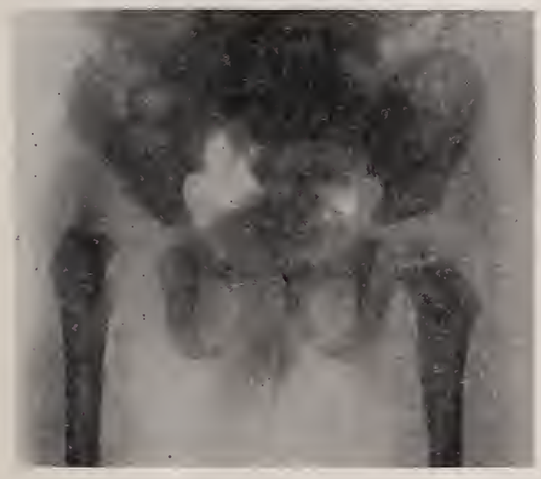

Fig. 1. Case I. Congenital dislocation of left hip. Male, age 2 years.

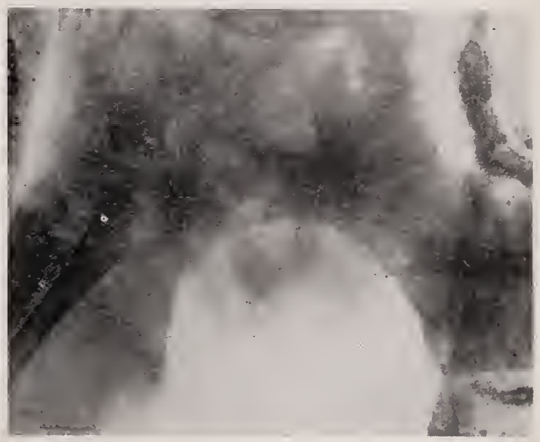

Fig. 2. Case I. After closed reduction, and application of cast.

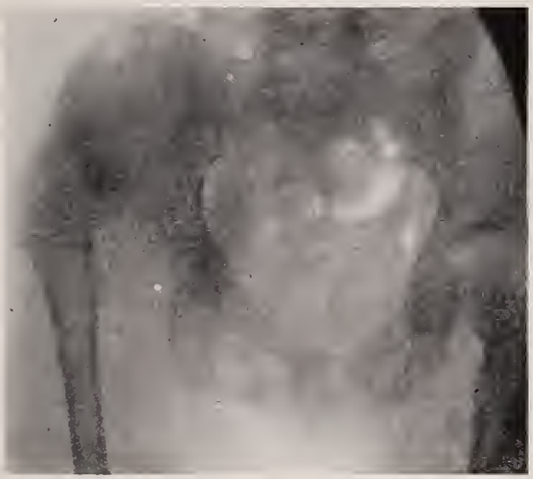

Fig. 3. Case II. Congenital dislocation of right hip. Female, age 6 years.

bed at home, because it is taken from the hospital and used at home at long as necessary.

At the end of the third month the plaster is removed from the knee downward on the affected side, and entirely removed from the well side. At the end of the sixth month, the cast is bivalved to permit application of heat, massage, and specified exercises. This part of the treatment is carried out in the home by the mother, who is given proper instructions, and the patient is brought in for observation only occasionally. The use of the cast is practically never continued beyond the ninth month, though free walking is not permitted until the twelfth month. So much for the closed method and the after-treatment. What cases need open treatment? First of all, those beyond the age of eight years; secondly, cases which have been repeatedly reduced but cannot be kept reduced. There is not time to describe in detail the technic of open reduction. The best approach to the hip joint is by the Smith-Peterson incision. The technic of Galloway of Winnipeg is now quite generally accepted as the best. One should not mention Galloway's name in this connection without stating that he prefers to do his open reduction not on children past the age of eight years, but on children between the ages of twenty months and two years. In children under eight years recurrence of the dislocation after reduction by the closed method is usually due to a poorly developed acetabulum; and open operation is certainly necessary in these cases. The Fairbank procedure is commonly employed. It aims to broaden the acetabular roof and at the same time deepen the acetabular cavity by turning down a thin slice of bone with its periosteum from the ilium just above the upper rim of the acetabulum. This pedicle flap is sutured to the capsule, and a wedge of bone cut from the upper portion of the ilium is laid in the groove at the base of the flap and fastened there with a bone peg or with sutures.

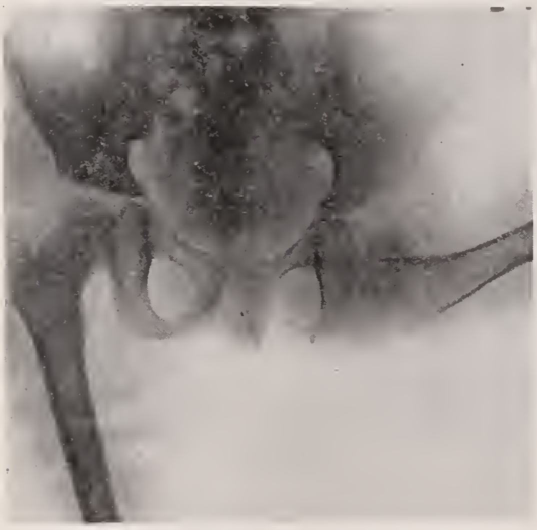

Fig. 4. Case II. Roentgenogram made between change of casts four months after closed reduction.

This topic should not be dismissed without a few words concerning the treatment of congenital dislocation of the hip in the young adult. Whereas formerly these patients were dismissed with sympathy, and regret that they did not seek treatment earlier, or at best were fitted with a leather pelvic corset with a pad to limit the upward thrust of the trochanter, surgical procedures of distinctly proven value are now available. The young adult seeks treatment primarily because of pain, hence, our obligation to such a patient is even greater than in the case of the little child who has only an awkward gait. In the adult complete reduction of the dislocation is usually an unwise procedure even if it is possible; the better thing to do is to make a stable false joint by osteoplastic work on the ilium. The head of the femur is pulled down as far as possible by preliminary traction maintained over a period of two or three weeks, the head of the femur is then exposed, and a shelf of bone turned down from the ilium is placed above the head forming a barrier which prevents upward excursion. In addition, some operators gouge out a depression in the ilium to serve as a pseudo-acetabulum. Our near neighbor, Dr. Frank L. Dickson of Kansas City has done much to demonstrate the value of stabilization by means of this method.

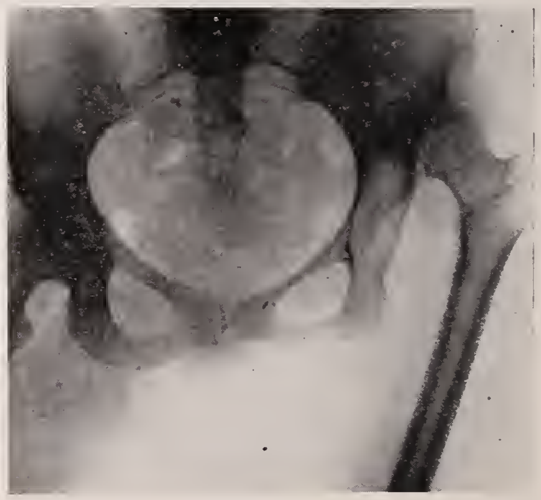

Fig. I. Case III. Congenital dislocation of right hip. Female, aged 26. The type of case distinctly benefited by the "shelf" stabilization operation.

A few years ago as Orthopedic House Officer at the Massachusetts General Hospital, I assisted Dr. Allison in a two-stage method in young adults which aimed to actually replace the femoral head in the acetabulum. The hip joint was approached through the Smith-Peterson incision, the capsule was divided by an anterior incision, the lesser trochanter was completely severed from the femur, and skeletal traction by means of "ice-tongs" applied immediately to the lower end of the femur. Traction ranged between twenty-five and forty pounds, and was continued for three weeks until the femoral head was brought down to a point opposite the rim of the acetabulum. Then a second open operation was performed approaching the hip joint by the same route; any remaining fibrous bands preventing reduction were cut through, and the head of the femur was finally replaced within the acetabulum which had been cleaned of the dense fibrous tissue filling it. The limb was then immobilized in the extended and hyperabducted position by means of a plaster cast. The end result justifies the use of this method in carefully selected cases, but as Dr. Allison himself insists, it is not a method which is as generally applicable to the young adult or adult class as is the stabilization without reduction. It entails two very major surgical procedures, a long period of treatment, and the expenditure of much energy on the part of the patient. The operation of stabilization without reduction does not produce severe shock, and is not accompanied by any danger to nerve trunks or blood vessels. Dr. Lovett used to impress upon us at the Children's Hospital that it is not a surgical triumph to reduce a dislocated hip in a patient of sixteen years if in doing so life is hazarded by shock, or irreparable damage is done.

In conclusion, I wish first to urge the desirability of early treatment of congenital dislocation of the hip, secondly to state the advantage of the closed method of reduction over the open method in the majority of cases under the age of eight years, and thirdly to disseminate the teaching that the case of the young adult is not a hopeless one.

DISCUSSION

H. WINNETT ORR, M. D., (Lincoln): I want to express my appreciation of this thoughtful, scholarly paper.

We have found in our experience that the recognition of this condition is too often delayed. The child who begins to walk late, with slight limp, is allowed to go for a long time before a doctor is consulted. Our experience at the Orthopedic for a number of years was that these children came, not at two and a half years, but at an average age of five or six, which you will agree is rather late. I have been trying to urge the parents of any child who limps as it begins to walk to consult a specialist for diagnosis and treatment.

As I have had opportunity, I am inclined to manipulate these patients earlier than Dr. Martin suggests. They begin to walk at one and a half or two years. I manipulate them at once. There is little to be gained by delay. If manipulation is postponed patients come back too late for the best results.

The doctor has expressed a preference for the Denuce method. I did not have the privilege of seeing him, but I saw one of his most enthusiastic disciples, Dr. Z. B. Adams of Boston, on several occasions. On one occasion when Dr. Adams was doing this manipulation, I turned to Dr. Ridlon and said, "What is the difference between this method and yours?"

He said, "The only thing I can see is he turns his thumb one way and I turn mine the other."

I think Dr. Ridlon should be mentioned in this connection as having done away with the amount of stretching which Dr. Lorenz employed. I take off my hat to Dr. Lorenz, but I think his manipulation which used to be employed, and still is to some extent, is too damaging for many cases; so that Ridlon's is the method of choice.

What Dr. Martin says about the importance of correct manipulation is all true. He has told us as well as anybody could. Our post-operative care is very much as he described it except that we do have a percentage, varying in the hands of operators from 15 to 30%, in which primary manipulation is not entirely successful. If the parents are warned, as he has suggested, that these are difficult cases and do not always turn out as we expect, then it is usually not difficult to obtain their consent for secondary manipulation or open operation. If the parents feel that this manipulation is all there is to it, the after care becomes more difficult. In sending patients for treatment, I think the physician should bear in mind there is a percentage—from 15 to 30—in which secondary surgery is necessary in order to obtain the best results. Sixty to 80 per cent will turn out fine with primary manipulation and good after care. This must be taken into account and be provided for in preparation of the parents.

The doctor has called attention to the importance of careful instruction of the mother. That has been one of the things I have been careful about for many years. I had a mother up north, between here and Fremont, back in a little farm home that was nothing more than a shack—a mother of average intelligence—and I never had a nurse who took better care of a child. I typewrote some directions for her and she carried the child through eight months with never a soiled cast or irritation of the skin, and the child had a perfect result. You can do that if you take pains.

I am glad to have Dr. Martin call attention to that, and I thank him for his paper.

W. L. SUCHA, M. D., (Omaha): Just a word about the diagnosis. In my opinion, I do not think there are many not diagnosed. There are a lot that are neglected after diagnosis. I think that is the point we should emphasize. I feel like Dr. Martin, that it is so easy to diagnose we do not need to say much about diagnosis. We should educate the laity first relative to the importance of realizing that the condition should be taken care of.

The age of the patient cannot be fixed. I feel one patient might be ready for a reduction at eighteen months, and another one at two years, and another perhaps at two and a half, depending, of course, upon the development of the patient. I think the patient should be so that he is going to be ready to walk at least by the time you get through. If you start earlier than that you do not get the best results.

I think before you start, the parents should be informed very specifically that it is going to be a long drag and may have to be repeated, and then may have to be operated. Particularly after you have done your reduction, you can make a fairly accurate prognosis. If they go in hard, they will come out hard; and if they go in easy, they will come out easy. If, after you have manipulated like Dr. Martin suggested, they do not tear the tissues like the old method called for, after reducing the abductors and getting ready to lift the head, if it falls in, which I have had it do, I make a guarded prognosis in that case. It went in too easy. While having the assistant hold the pelvis and while I was holding the thing and massaging, I have had it fall in before I had a chance to reduce it.

Just a word about the adult. I do not think too much can be said about stabilizing those people. It is a shame to allow them to go on suffering and disabled with an unstable hip. With the stabilized hip you correct a big percentage of their lordosis. If your hip quits migrating up with each step and the head of the femur does migrate upward, it does not pull their backs in so badly. You get rid of lumbar lordosis and make them fairly able-bodied with well stabilized, even if unreduced, hips.

J. E. M. THOMSON, M. D., (Lincoln): This paper should not pass without a few more comments.

To carry on a little further what Dr. Orr said about early diagnosis, I was interested in the clinic of Dr. Putti in Bologna where I visited a few weeks ago in the fact he is carrying on a campaign throughout Italy in behalf of potential congenital dislocation of the hip. He has found that a certain number of babies, if watched for physical symptoms before they begin to walk, who from an x-ray standpoint you would not recognize as congenital hip who will develop a true congenital hip when they begin to walk. That was contrary to my early teaching, but during the last year they had three hundred congenital hips in their clinic. Therefore, this fact cannot be overlooked at one of the large congenital hip centers. Apparently congenital hip is on the increase in Italy. The doctor is not sure this is true, but he believes in educating people to recognize the condition early. If frequent inspection is carried out by the home doctor, he will recognize little defects in contour, and appearance of the extremities. If you find a child with one leg smaller or shorter, with one side of the pelvis tipped higher than the other, remember that child has a possible congenital hip and should be watched closely. Even though the x-ray is not always accurate, by manipulation you will find a hip slightly high, and it should be held in a reduced position before the child is allowed to walk.

I have been interested in this clinic from the fact he adds to our later treatment. After the first cast has been on for four months, uniformly he rotates the foot inward and brings leg down some so as to allow the entire leg with the anterior portion of the capsule to shorten and gain greater stabilization thereby. Later he brings the leg down farther and holds it in position with greater ease. It enables the patient to get quicker use of the leg. One of the great difficulties we ordinarily meet is getting the leg down and getting early function. After six to eight months, the child in his clinic can use this leg about as well as the other one.

DR. MARTIN, (closing): I want to thank the men who have discussed the paper for their interest and kind words.

I did not touch on the matter of diagnosis because I was talking to a bunch of men who have been in practice longer than I have. I think it is not up to us to educate the other men. I think diagnosis is certainly not always easy. Even in one of the orthopedic hospitals in which I served, I recall a case which went as a sclerosis for three years until a new man found a dislocated hip. It is not an easy thing. Usually I think nowadays the diagnosis can be made as soon as the child begins to walk. I think Dr. Ridlon of Chicago perhaps is entitled to some credit in connection with those reports. I do not think anything new can be brought out for which he has not been given credit. I remember reading about Dixon's stabilizer, and Dr. Ridlon said Ferguson had done that forty years ago; and so there is not much new in orthopedics Dr. Ridlon cannot recall.

I want to stress the importance of telling the people in adult life something can be done for them. They have lots of pain and it is wrong to dismiss them without any effort at least at correcting the cause of their pain. The stabilizer operation is not a big operation in the sense of danger to life, and they are definitely benefited by the procedure.

Again I want to thank you.

THE TREATMENT OF DIABETES MELLITUS*

F. L. ROGERS, M. D.,
Lincoln, Nebraska.

The committee who arranged this medical program has requested that I read a paper on the treatment of diabetes which will be of practical value to those who do not have available for their use well equipped laboratories and trained dietitians. The mild or moderately severe diabetics without complications may be treated properly outside of the hospital without dietitians and with only a very simple laboratory. The physician undertaking such treatment must feel a heavy responsibility, for he must take the part of both the dietitian and the laboratory. The same treatment must be given if the patient is in the homes as would be given if he were in the hospital. The severe cases, those with complications, and children who have diabetes, should be hospitalized until their condition is under control and until they are well trained to care for themselves.

All diabetics must be taught. They must know something of the nature of the disease, the good prognosis with proper treatment and the poor prognosis with improper treatment. They must know a great deal as to food values, and know how to examine urine for sugar. They must be warned as to the danger of wounds and infections. Patients taking insulin must know how to measure it, how to properly use a hypodermic and the danger, symptoms, and treatment of an overdose. Numerous books which contain such information, for the patient, may be obtained, and every diabetic should be provided with such a book.

An ambulant adult patient requires approximately 30 calories per kilogram of body weight in his daily diet, a kilogram being equal to 2.2

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

pounds. One gram of protein equals 4 calories; one gram of carbohydrate equals 4 calories; one gram of fat equals 9 calories. The weight of the patient and not his appetite should be the index to his requirements. An initial diet containing one gram of protein, one gram of carbohydrate and 2.5 grams of fat to each kilogram of body weight will supply this 30 calories and will have a ketogenic-antiketogenic ratio which will prevent acidosis. The overweight patient should be given less fat, about 2 grams per kilogram of body weight. Children should be given more protein, somewhat more carbohydrate and less fat. A patient weighing 60 kilograms (132 lbs.) would then be given a diet containing 60 grams of carbohydrate, 60 grams of protein, and 150 grams of fat. It is best to give three meals each day of somewhat equal caloric value. The menu showing the kinds of food and the number of grams should be written by the physician. By using a food chart the patient may substitute any food of the diet for another food of equal value. All the food must be weighed in a gram scale. The patient should be kept on this diet for one week before any alterations in the diet are made and before insulin is given. During this time 24-hour specimens should be saved, the urine tested for sugar, and if sugar is present the percentage determined.

A chart showing the carbohydrate, protein, and fat of the diet, the amount of urine, the presence or absence of sugar, the percentage of sugar, the presence or absence of acetone, the patient's weight, and the amount of insulin should be kept by the physician and will be of the greatest assistance in forming a correct opinion of the severity of the disease, the response to treatment, and will serve as a guide for further treatment.

At the beginning most patients will feel that the weighing of the food and the saving and testing of the urine are too troublesome to be worth while. Persistance and encouragement on the part of the physician are most important at this time. The patient who conscientiously carries out the treatment will soon find it much easier and when he realizes his condition is improving will need little more encouragement. When the disease is well under control the patient will learn to accurately estimate many articles of diet and the urine examinations will need to be made less frequently.

If the patient is sugar free at the end of the week, insulin is not required. If the patient is much below weight the diet may be increased slowly, adding a small amount every few days. This additional food should be carbohydrate and fat, twice as much fat as carbohydrate. If sugar appears, the diet should be reduced to a value below the place where glycosuria reappeared. If the patient is still below weight this diet may be increased and insulin given to keep the patient sugar free.

If the patient's urine contains sugar after this trial week, then insulin is to be used. The average number of grams of sugar in the urine during the last three days of the week is determined and a unit of insulin given for every two grams. When less than 15 units are required it is best given in two equal doses, one 15 minutes before breakfast and one 15 minutes before the evening meal. When more than 15 units are needed it is given in three equal doses, one before each meal.

When insulin treatment is started the 24-hour specimens should again be saved and tested until the physician is certain that the diet is sufficient and that the amount of insulin keeps the patient sugar free and will not produce a hypoglycemia. Once the diet and dosage of insulin is definitely determined, the patient should make no change in either without consulting his physician. On proper treatment the sugar tolerance of most diabetics will increase. The diet may then be increased or less insulin will need to be given.

Blood sugar determinations are of great assistance in properly balancing the insulin against the diet. An intelligent patient will soon learn to recognize a slight insulin overdose and at those times one can be certain that the blood sugar is too low. If there is sugar in the urine the blood sugar is too high. In most patients this balance is not hard to maintain, but in severe cases it may be difficult. I have a severe diabetic under treatment at this time in whom the point at which sugar appears in her urine is about the same point at which she has a mild insulin reaction. At a result we have both sugar in her urine and mild insulin reactions most every day.

Hypoglycemia is more dangerous than hyperglycemia. An insulin reaction never occurs if the diet against insulin balance is correct, and always occurs if too much insulin is taken. Some mistake will always be found to account for the condition. The symptoms depend on the amount of the overdose. In mild cases there is nervousness, restlessness, weakness, and hunger. In severe reactions the above symptoms are more severe and there may be sweating, marked excitement, emotional disturbance, delirium and unconsciousness, which if not properly treated may terminate in death. In one case which I observed the reaction was very much like a severe hysterical attack and in another the patient after only mild symptoms went into what appeared to be a deep and peaceful sleep.

Patients starting the use of insulin should carry a few lumps of sugar with them and one or two taken if symptoms occur. Any carbohydrate-containing food will control the symptoms. In the serious cases a half ounce of corn syrup or sugar diluted in water should be given and repeated every ten to fifteen minutes until the symptoms disappear. If the patient is unconscious the sugar may be given by stomach tube or by rectum. Ampules of glucose are on the market and may be given intravenously in doses of 15 to 30 grams. The results of treatment are most remarkable, the patients returning to an apparently normal condition in a very few minutes.

Diabetic coma is due to acidosis, which is the accumulation in the body of improperly burned fats. Fat is properly metabolized only in the presence of sufficient metabolizing sugar. The treatment of this condition is to rapidly burn sugar. Insulin must be given in large doses and some sugar to prevent hypoglycemia. The urine should be tested frequently for sugar and acetone, and this will serve as a guide in the treatment. From 30 to 50 units of insulin should be given as soon as the diagnosis is made. It should be repeated in doses of from 10 to 30 units every 2 hours as long as there are symptoms of coma. Sugar should be given by mouth or intravenously in doses sufficient to keep sugar in the urine. One must remember that too much insulin without sugar may be the cause of death to a patient in diabetic coma. As a rule give a gram of sugar per each unit of insulin in treating coma, but be guided by the results of urine examinations and blood sugar determinations.

Any infection reduces the ability of the diabetic to utilize sugar and makes acidosis likely to occur. During the presence of the infection more insulin will need to be given. The amount depends on the result of urine and blood examinations. The urine should be kept acetone free and sugar free. If the regular diet is not tolerated then sugar in more concentrated forms should be given and balanced with insulin.

Surgery is a safe procedure in diabetes when the patient is properly prepared. The diet and insulin should be balanced for sometime prior to operation when possible. Then if food is not tolerated postoperative, glucose may be given per rectum or intravenously, and a sufficient amount of insulin.

VACCINE THERAPY*

A. S. RUBNITZ, M. D.,
Omaha, Nebraska.

The ultimate aim of the medical practitioner is to restore his patient to health. Different drugs and chemicals have been used as remedial agents from time immemorial, but, to our regret, we can name but only a few that have a definite proven value in the treatment of infectious diseases.

By far the greatest factor in combating infection is immunity. Without immunity mankind, and animals, for that matter, could not survive the first decate of creation.

Our body cells, then, carry in them the potentialities for fighting infection. Stimulated by invading microorganisms (infection) the body cells most commonly will try to elaborate remedial agents (antibodies). When antibodies are formed in excess, the infection is arrested and overcome. When antibodies formed are insufficient or inadequate, the infection will spread. When both forces, antibodies and infectious agents are about equal, a state of chronicity will result.

Some facts about immunity in general were known to mankind for centuries. A child for instance, having had the measles, would be expected to be immune to measles. With the introduction of cowpox vaccination against smallpox, medicine is taking its first step in establishing certain immunologic principles. Between 1796 (time of Jenner's experiments) and 1879, (the time when Pasteur accidently discovered some of the main underlying principles of vaccine therapy) no progress had been made in that field.

But since Pasteur's first discoveries to the present times there have been compiled a wealth of data regarding the mechanism and principles of immunity. The chief underlying principle of vaccine therapy, is that *the degree of immunity is not necessarily in proportion to the severity of the disease,* thus a mild infection or even "artificial infection" may be followed by the much desired immunity. Pasteur's discovery formed the basis of prophylactic immunization or bacterin therapy. At first the principles of immunization were applied chiefly to lower animals, but little by little certain facts were established, and biologic therapy was made use of in the treatment of human infections.

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*Read before the Omaha-Douglas County Medical Society, April 12, 1927.

At the present vaccines are used in a great number of conditions. While most extensively used in prophylactic immunization, yet the use of vaccines in the treatment of established infections is becoming more and more a common practice.

Vaccines act as antigens or substances that stimulate antibody formation. In any infectious disease the infectious agent, in a greater or lesser degree, acts as a stimulant to the tissues to produce antibodies. In a good many generalized systemic infections immunity will develop as a result of these stimulants, unless the body cells are so overpowered by the toxins that they have no "come-back" left in them. But, suppose we have a severe localized infection. The body as a whole will, probably, react to it, but in a manner insufficient to stimulate antibody formation on a scale appropriate enough for this infection.

The tissues directly affected cannot carry on the battle intensively because they are suffering from the infection the most. They cannot even send out enough stimuli to other parts of the body, because the circulation in the infected area may be impaired; and above all, nature will respond to the local irritation by the production of an abundance of fibrous tissue which in a way helps to isolate the affected area and interferes with the absorption of antibodies, if any are formed. In giving to that individual the proper antigen into his healthy tissues, we stimulate his cells to produce antibodies. The healthy area where the antigen is injected is not handicapped by any infection; the antigen will be absorbed readily and sound the alarm to all healthy body cells. In this way the vaccine will stimulate in the interests of the infected issue the unexercized immunizing capacities of the uninfected tissues. This is especially true in chronic infections.

In cases where there is more than one organism causing the infection, or where we are not certain which of the recovered organisms is the offending one, it is customary to make up the vaccine from the entire growth, so called, mixed vaccine.

It has been demonstrated by Costellani, in 1903, that on injecting an animal with two different organisms at the same time, agglutinins were produced for both, and that the amount of agglutinins for each was about the same as in those animals immunized with one type of organisms. Subsequently he stated that as many as six different kinds of bacteria may be combined in a single vaccine with the same results. But, whenever we are certain about the offending organism, we should exclude the secondary invaders from the vaccine because the dose of the mixture would have to be much higher in order to contain the same number of antigenic units; and the reaction would be that much more severe.

Stock vaccines, or vaccines prepared by commercial houses, have, undoubtedly, some good in them, and are advantageous in many instances. For protective immunization, like typhoid, they are the only vaccines available. In other instances, as in gonocuccus and tuberculous infections, stock vaccines possess but slightly inferior therapeutic value as compared with autogenous vaccines. But the difficulty in cultivating and preparing the latter and the delay which would result makes it almost imperative to use stock vaccines in such conditions.

Autogenous vaccines should be used whenever possible because (1) the bacteria are changed but very little, (2) variants may occur among cultures of the same species, and the injection of one strain may not protect against another. In the use of autogenous vaccines the risk of using an alien species or a different strain is reduced to a minimum, (3) the antigenic properties of a vaccine may deteriorate with time, especially at higher temperatures, and we are never certain as to the age of stock vaccines.

As to the type of cases where vaccine therapy is indicated no absolute rules have been formulated yet. In chronic localized infections, where the quantity and quality of the desired antigenic stimuli are inadequate, vaccines are indicated the most. Also in subacute or even acute localized infections, vaccines will bring good results if used judiciously.

When Sir Wright attempted to lay down certain fundamental rules regarding vaccine therapy he advanced the idea of "negative phase", i. e., if an additional burden be added to tissues already taxed to capacity (when administering a vaccine in an acute infection) a period of diminished blood resistance or lowered immunity may ensue.

The authority of Wright in his times was so great that no one dared to doubt the truth of his theory and vaccines were not used in acute infections. We have sufficient proof at the present that the fear of a negative phase has been greatly exaggerated. Good results may be obtained by the use of vaccines in acute or subacute cases. Success or fealure with vaccines depends on what and how you use them.

(1) If you have an infected area where the tissues are broken down with formation of a pus

cavity, drain the pus first, and, if this simple surgical procedure is insufficient, or you have reason to believe it is going to be insufficient, follow it up by vaccine.

(2) Use a vaccine made up of the offending organisms altered as little as possible. If you happen to run into an area of the body where spore-forming bacteria are present, the antigenic properties of your vaccine will be greatly impaired by trying to kill the spores and, unless you have good reasons to believe that the spore-forming organism is a causative agent, get away from it, even if you have to make many attempts in culturing.

(3) Be sure that the specimen you are culturing is a representative specimen. Don't expect for instance, a nasal smear to contain the organisms present in the sinuses. One of the chief requisites for a good vaccine is the obtaining of the proper specimen.

(4) Increase the dosage steadily till the maximum is reached (manifested by reaction) but do not strive for a reaction.

(5) Be always on guard for signs of fresh infection by other organisms, and if a given vaccine is not producing the desired results, make additional cultures and make a fresh vaccine.

In other words, do not use a viccine simply to satisfy your conscience; use it as something that you are sure will bring results and you will be rewarded in a great many cases where other therapeutic measures failed.

NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST, and A. J. MILLER, M. D., PATHOLOGIST

Edited by L. L. Davidson, M. D.

CASE NO. 21317. January 7, 1927.

A deeply jaundiced and emaciated farmer of about 60 years walked into the ward, November 10, 1926, complaining of

Tiredness,
Itching,
Difficult Urination and
Frequency.

He was admitted to the Medical Service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: He was cooperative but mentally confused, any maladies being developed with the proper questioning.

At about the age of 25, after exposure to venereal infection, the patient developed difficulty in urination, swelling of the penis but did not recall any discharge nor ulcerating sore on the penis. About this same time or within a few weeks, he noted a few small painless sores on the legs. He saw a doctor and after taking medicine they rapidly cleared up along with the other symptoms.

About four years ago a hayrack fell upon him, injuring his back. He was in bed a few days, was unable to work for several weeks because of soreness and stiffness of the back.

Three years ago frequency and pain on urination suddenly developed. He said that he attempted to urinate 30 to 40 times a day and 20 to 30 times during the night, but could pass only about a teaspoonful at a time. He did not remember about fever nor anything abnormal about the urine. A doctor catheterized the patient daily for three to four days. This was continued in a hospital for ten to twelve days. An operation was advised but refused by the patient because of his weakness. The frequency was not relieved until medicine was given by mouth after which it cleared up within a few days.

In May, 1926, he noted weakness and loss of appetite. He had lost about 10 lbs. during the previous four months. He saw a doctor who told him that he would be jaundiced in four days. Jaundice developed rapidly with itching and he was again confined in a hospital and operation again refused.

The frequency recurred in June, 1926, and about as severe as previously. The jaundice deepened. He continued work on the farm. Since August the frequency has decreased. He was sent to the University hospital, having refused operation, but having lost about 30 lbs. during the past year and having developed a deepening jaundice.

PREVIOUS ILLNESSES: He had scarlet fever in childhood. He had had some difficulty in vision for the past four years. He had had no pain in the abdomen, flatus nor constipation. There was no food dyscrasia.

FAMILY HISTORY: His father died of blood poisoning, age unknown. His mother died at 80 years, cause unknown. He had three brothers, about 40, 50 and 70 years, about whom he knew nothing. His wife was living and well, age 46, there having been six children all living and well and no miscarriages.

PHYSICAL EXAMINATION: T. 96.8, P. 68, R. 20. A well developed but markedly emaciated and jaundiced man lay comfortably in bed. He was mentally confused and the history did not seem reliable.

Head: The sclerae were deeply jaundiced. The pupils reacted to light and were equal and regular. There was some ptosis. His nose and ears were normal. Most of the teeth had been removed but the lower incisors and canines remained but were in poor condition. The mucous membranes were yellow. The tonsils could not be made out.

Thorax: There was a moderate costal flare. The anterior posterior diameter was increased. The ribs were prominent.

Lungs: There was no alteration in fremitus and expansion was equal. The chest was hyperresonant throughout. A few fine rales were heard at the right base.

Cardiac: The apex beat could not be made out. The area of cardiac dulness was 5.5, 8.0, 9.5 and 11 cm. to the left of the sternum in the 3rd, 4th, 5th and 6th interspaces, respectively. There was no apparent right-sided enlargement. The rate was 70 and regular. There was a soft systolic murmur heard best at the apex but could be heard all over the precordium. The A2 and P2 were equal in pitch and intensity.

Abdomen: The abdomen was flat and there was a prominence of ramifying superficial veins brought out by the patient's rising to the sitting position. A small prominence was seen in the region of the gallbladder which on palpation was ovoid, tender and appeared to be about 5 cm. in diameter. This mass was smooth, resistant and moved with the liver. The liver edge was sharp, elastic and regular. It extended about four fingers below the costal margin in the midclavicular line. No other organs were palpable.

Extremities: The fingers appeared clubbed and the wrists were thick as well as the knees. The lower portion of the legs was reddened, swollen and pit on pressure. The knee reflexes were equal and hyperactive.

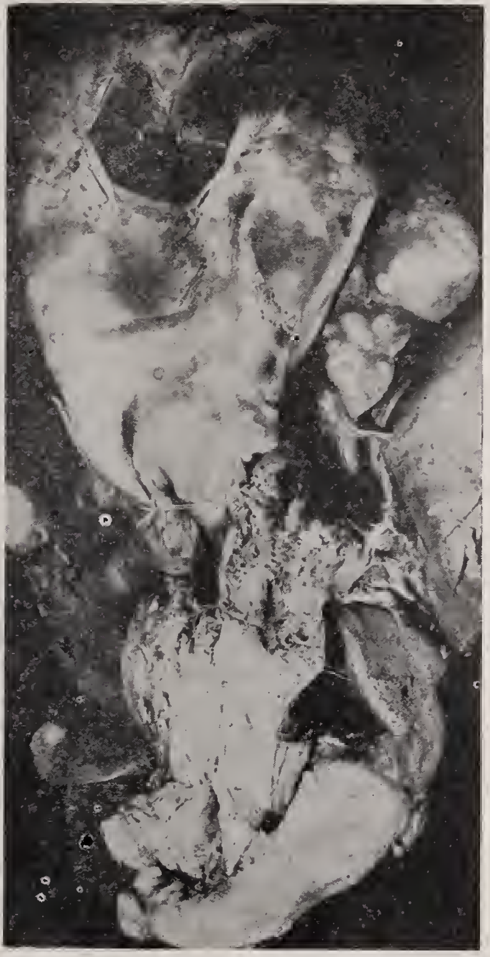

Fig. I. Gall-bladder lifted up and viewed from below. The cystic and common ducts are opened to the duodenum, which is in the lower part of the picture. Note the tumor mass in the wall of the common duct.

Rectal: The prostate was medium in size, smooth and elastic, without nodules. The median groove was present and the lobes were symmetrical. There was no tenderness.

LABORATORY: The blood counts varied but little during the course in the hospital. On entrance the R. B. C's. numbered 3,570,000, the W. B. C's. 9,400, with 83% neutrophiles and 17% lymphocytes. The last count on December 2nd gave a Hb of 76%, 3,300,000 R. B. C's. and 11,600 W. B. C's. The blood Wassermann was negative. The Van den Bergh direct was strongly positive and the indirect 11 units. The icterus index was 120.

The urine examination showed only a few changes. The specific gravity varied from 1014 to 1020, was alkaline then acid in reaction, showed no sugar, or diacetic acid and had a 4+ bile in all specimens. At first there was no albumen, pus, red blood cells or casts. The last specimen, however, had a 1+ albumen and a few granular casts.

A Rehfuss test meal over a period of one and one-half hours showed no free hydrochloric acid and a total of not over 17. There was a one plus benzidine on two specimens. The stool, November 15th, consisted of light gray, small mealy balls. There was no blood, pus nor bile. Sudan iii stained a large amount of microscopic fat and some undigested meat fibers. Another stool specimen, December 1st, was soft, black and blood was present by the benzidine test. A few red blood cells were seen under the microscope.

PROGRESS: The patient was in the hospital 27 days. The temperature was always below normal, averaging around 97. The pulse was between 60 and 80 and the respirations usually numbered about 15.

Nov. 15. A Graham-Cole examination was done today. Roentgenograms were taken 12, 16 and 20 hours after oral administration of 45 grains of tetraiodophenolphthalein and showed no gall-bladder shadow.

Nov. 17. Chest x-rays showed considerable mottling throughout both lungs, especially extending from the hiluses to the medial portion of each base. There were numerable areas of calcification in both hiluses and several circumscribed areas of decreased density simulating cavitation. There was an increase of density of the upper right apex, no fluid at the bases. The heart was rather small but normal in position. The arch of the aorta was widened.

A gastro-intestinal examination was made. Fluoroscopy of the chest showed an increased density of the right apex, an unusual amount of hilus thickening, rather ragged and dense border of the diaphragm on the right medial side. The diaphragm had a good excursion, symmetrical, and the complementary spaces filled well. The aorta was moderately broad but uniform in all diameters up to its passage through the diaphragm. There were no abnormal curves of the esophagus. Food passed through the cardia promptly and the greater curvature of the stomach was on the level of the umbilicus. Peristalsis was normal with no filling defect. Duodenal cap was smooth but flattened on the upper surface. Through the pylorus, the meal was narrowed. There seemed to be a constricting band about the first two inches of the duodenum hindering the passage of this meal. There was no six-hour residue.

Nov. 18. Notation was made of the deepening jaundice and the freedom of the patient from complaints. He appeared stuporous. The mass in the region of the gall-bladder was larger, firmer and was not regular.

Nov. 22. The mental condition remained the same. Purpura appeared behind the right ear.

Nov. 24. Surgical consultation was sought with a remote possibility for assistance but an exploratory was not advised.

Dec. 3. Weight was recorded as 115 pounds. Stupor had deepened into coma. The jaundice was intense. The mass was recorded as being very prominent, hard and irregular. The chest examination was negative. He died three days later a cardiac death.

DR. DUNN'S DISCUSSION:

The striking points emphasized in the bill of complaints are emaciation and icterus in a man of sixty years, for which there was no apparent explanation, and who had also had difficult and frequent urination. Icterus and emaciation in a man of sixty years suggests immediately a chronic obstructive process involving the bile duct system within or without the liver or both. This process may be either inflammatory or malignant. The history gives us but little assistance in the development of these observations.

The genito-urinary difficulties of thirty-five years ago may or may not have been luetic. With this history scars on the penis and other stigmata of lues should be looked for and a Wassermann made.

The back injury that occurred about four years ago has no apparent bearing on the patient's present malady.

The sudden onset three years ago of frequency and pain on urination is important. Frequency of urination is a symptom that compels attention; a history of attempting to urinate 30 to 40 times a day and 20 to 30 times during the night raises the question of obstruction from prostatic enlargement. An operation was advised. The history does not say what the nature of this operation was to be.

Jaundice was a relatively recent development. Its onset was anticipated by the doctor according to the history (his sclerae must have been icteric before his skin). The jaundice deepened rapidly and operation was again advised, probably to correct the icterus. The frequency recurred in June, 1926, and became about as severe as previously. The jaundice deepened. No explanation is apparent for the decrease in urinary frequency. That he took medicine for it means nothing. Two things stand out in the history: Progressive emaciation and icterus. They should direct our investigative attack.

There had been some difficulty in vision during the past four years. It would be interesting to know whether the difficulty in vision was due to some systemic or local disease of the eyes or was from presbyopia alone. Such a differention, however, would be of only passing interest and could have but little bearing on the problem in hand—the solution of the icterus. It is interesting to note the absence of abdominal complaints such as pain, nausea, vomiting, gas or constipation.

In the family history it would be interesting to know as a matter of record whether there had been cancer in the immediate family. Since Maude Slye's work we must accept inheritance as a factor in the liability to carcinoma. A history of cancer in the family is not of diagnostic value but such records should be made in our hospitals if for no other purpose than to provide material for statistical treatment. A few years suffice to demonstrate the hereditary behaviour of carcinoma in many generations of white mice. It takes hundreds of years to demonstrate the same thing in the human animal.

Physical examination revealed a well developed but markedly emaciated and jaundiced man lying comfortably in bed. He was mentally confused—the confusion probably referable to the intense icterus. Emaciation and icterus in a man of sixty years brings carcinoma to the fore. Possible locations for a primary carcinoma must be sought and neoplasm should be excluded only with great care. "Some ptosis" was mentioned in the examination of the head. Ptosis in a stuporous individual is of little significance unless unilateral. Ptosis is a bad symptom to play fast and loose with. It either should be omitted or fully described. A real ptosis indicates a lesion of the oculomotor nerve and is an important clinical sign. The pseudo-ptosis of cervical sympathetic disease, of stupor, and of hysteria, are something different.

In the examination of the chest, a few observations are noteworthy. With hyperresonance, prominent ribs, with heart covered with lung, the diagnosis of emphysema probably of the senile type may be safely made. The interpretation of the rales found at the bases of the lung is more difficult. It means that there is an increase of moisture either in the alveoli or in the bronchioles, or a "sticky" pleura. In the former event it means an excess of fluid; in the latter inflammation. It is rather bootless to mention rales in a physical examination where there are no accompanying signs recorded, such as fremitus, breath sounds or altered resonances, which might qualify and render an interpretation of the rales possible.

Liver dulness commonly begins at the fourth interspace in the middle line. Its location is of particular interest in this case when we take into consideration that the liver was recorded as extending four fingers breadth below the costal arch, which means that we probably have at least at the time of the second observation an enlarged liver to account for. The upper border of the liver has not been given to us.

The heart beat was 70 and regular. Its size was given as 11 cm. to the left of the sternum in the sixth interspace and 9.5 cm. in the fifth interspace. One of the two measurements is likely wrong. There was a soft systolic murmur heard best over the apex but it could be heard all over the precordium. "A systolic murmur heard best over the apex" is a precarious sign, unless associated with other definite findings, on which to hitch a diagnostic opinion. The transmission of the murmur was not given. A murmur transmitted best to the axilla usually arises from the mitral valve. A large percentage of systolic murmurs heard in elderly people are of aortic origin whatever their location. Murmurs that arise from an aorta that is somewhat dilated and stiff are quite occasionally heard best at the mitral area. The A2 and P2 sounds were of equal pitch and intensity. From the data given nothing of great import can be diagnosed in the heart.

The abdomen was flat and there was a "prominence of ramifying superficial veins" which were brought out by having the patient sit up. This sign is suggestive of partial obstruction of the inferior vena cava. There was a small prominence in the region of the gall-bladder which on palpation was tender and ovoid and appeared to be about 5 cm. in diameter. This mass was smooth, firm and moved with the liver. I should like to know about its hardness.

INTERN: The mass was resistant but not hard.

DR. DUNN: If the mass were not hard, if it were ovoid, moved with respiration, and was located in the region of the gall-bladder, the natural assumption is that it was an enlarged gall-bladder. In a case of obstructive jaundice the palpation of a gall-bladder is a matter of extreme importance. Some 90 per cent of the non-inflammatory obstructions of the common duct are associated with enlargement of the gall-bladder. A contracture of the gall-bladder rather than an enlargement is the result of chronic inflammatory obstruction in about the same percentage of cases. The determination as to whether this mass was an enlarged gall-bladder or not is of crucial significance from a diagnostic standpoint. From the description given at this time we must assume that the mass was a dilated gall-bladder.

The liver edge was sharp, regular and extended four fingers breadth below the costal margin in the midclavicular line and if the upper border was at the normal place the liver should weight between 2000 and 2500 gm. A simple obstructive jaundice of itself should not give rise to such an enlargement of the liver. In an icterus with a very large liver we must assume some other cause for the icterus than a simple biliary stasis. The difference in consistency should give us a clue; this liver's edge was reported as sharp, elastic and regular and extended four fingers below the costal margin—certainly not the description we should expect of a liver the seat of carcinomatous invasion. The failure to fix the upper border of the liver is confusing; it may well be argued that the position of the lower border of the liver was a result of the emphysema.

The urinary examination revealed nothing of importance except bile in large quantities. Three specimens showed no pus and the fourth showed a few granular casts and albumen. We will expect the kidneys to ultimately go on to a cloudy swelling, with sloughing of cells and formation of numerous casts as occurs in intensely icteric patients.

The red blood count remained fairly constant but the white blood cells gradually increased. We can attribute this rise in white blood cells to terminal infection.

A Rehfuss test meal over a period of 1½ hours on November 11th showed no free HCl and a total of not over 17. HCl is practically always absent in the terminal stages of icterus. There was a 1+ benzidine in two of these specimens.

As icterus increases in intensity bleeding may occur from the gastric mucosa. Hemorrhages of great intensity are on the other hand not commonly due to icterus alone. The bleeding described might have been due to trauma in passing the tube.

The stools were light gray with hard small balls. There was no bile but a large amount of fat. The color and consistency of normal stools are so variable that one must be careful not to be too strongly influenced by what seems to be an acholic stool.

X-rays of the chest showed definite density in the right apex and what is suggestive of cavitation. The heart is rather small but normal in position. The arch of the aorta is greatly widened and increased in density. The breadth of the fourth interspace is about 12 cm., a little larger than normal. The aortic area is about 8 cm. These are six-foot plates. One of the things that happens with advancing years is an elongation of the aorta with broadening of the aortic shadow.

There is nothing particularly significant in the gastrointestinal pictures. Under the fluoroscope, however, there was reported a constricting band about the first two inches of the duodenum hindering the passage of the meal. This constricture may have been due to adhesions or pressure. Roentgengrams of the gall-bladder taken 12, 16 and 20 hours after having given orally 45 grains of tetraiodophenolphthalein showed no gall-bladder shadow. Our patient had a complete icterus with a marked biliary stasis. Disturbance in the parenchyma of the liver followed; therefore, one would not expect the dye to have been excreted and in that event a normal gall-bladder would cast no shadow. It is in just such cases as this that the Graham-Cole method is of no value. Failure to get a shadow here does not mean closure of the cystic duct.

During the patient's stay in the hospital, there were notations of his deepening jaundice and mental clouding. The mass in the region of the gall-bladder was reported as larger, firmer and not regular. In other words the character of the mass had changed to a certain extent. The record does not say whether the mass could be held down during expiration or not. It does not say whether this mass and the one described when the patient entered the hospital were the same. They are in the same region and the argument is in favor of their being one and the same. If this is true the character of the mass has altered. This completely changes our previous interpretation of the mass. We had interpreted the smooth ovoid, resistent mass as a gall-bladder. A firm mass of *irregular* contour cannot be a gall-bladder.

We must assume that we have in this case a complete icterus, although the stools have not been checked with sufficient care for bile. A laboratory method that we have found of great value is a test for bile in the stools that receives too little attention. A saturated solution of bichloride is mixed with some stool in a petrie dish and set aside, and in the course of a few minutes to a few hours a dark rose-pink color appears if bile is present. By this simple test you can follow the appearance or disappearance of bile.

The following scheme will serve to visualize the common etiologic types of icterus:

I. Mechanical obstructive icterus from involvement of the common duct.

A. Within the duct.

1. Stone.

2. Mucus.

3. Parasites. This latter is rather exceptional.

B. Obstruction in the wall.

1. Carcinoma. Carcinoma of the duct-wall is small and the tumor is not a palpable one. The gall-bladder is almost invariably distended and can be palpated. The carcinoma may be located either in the duct proper or at Vater's papilla. If it is at Vater's papilla there will be an absence of pancreatic ferments in the stools in from 60 to 65% of the cases—the converse of the incidence of a patent Ductus Santorini.

2. Strictures. Not likely to give complete icterus.

3. Inflammatory processes in the duct-wall, usually associated with stones.

C. Pressure from without by tumor masses of all sorts, which is probably the most common cause of obstructive icterus. Icterus occurring from carcinoma at the head of the pancreas is the most intensely progressive of any due to outside pressure.

II. Pressure on the hepatic ducts. An interesting feature in icterus associated with pressure on the hepatic ducts of the porta hepatis is the ascites. With ascites and complete icterus we may look for obstruction of the hepatic ducts of the hilus. Incomplete icterus is present with obstruction of one of the branches of the hepatic duct.

III. Choleangitis producing an obstructive icterus of the bile capillary origin.

We will attempt to construct a diagnosis:

1. We have a "firm irregular" tumor mass, a complete icterus increasing in intensity and a duodenum that is thinned out. The assumption is that we are dealing with carcinoma of the head of the pancreas with pressure on the duodenum. Thinning out of the duodenum would not be so likely in a carcinoma rising in the gall-bladder. Furthermore, the most intense types of icterus do not often occur in carcinomas of the gall-bladder.

2. The liver—biliary stasis and probably carcinoma. I mentioned before that a liver of this size is difficult to account for on the basis of stasis alone. There is no heart condition to account for a congested liver. If the liver is as large as assumed it must be carcinomatous.

3. From the x-ray evidence we will suspect an old tuberculosis of the lungs and emphysema. The x-ray findings showed chronic adhesive pleurisy at the right base.

4. Diffuse dilatation of the aorta is to be read from x-ray evidence. No evidence was given on which to base a diagnosis of a heart lesion.

5. In the kidneys we expect extensive parenchymatous changes.

DR. MILLER'S DISCUSSION:

External Examination: The body was that of a rather poorly nourished, elderly, white man. The sclera and the skin everywhere was deeply jaundiced. Over the region of the 7th, 8th, 9th and 10th ribs on each side were numerous large superficial, crusty lesions said to be the result of ruptured blebs. They form an incomplete trunk about the body. The body had been embalmed several hours before examination. The incision was limited to the abdomen.

Body Cavities: There was clotted blood in the abdomen evidently the result of the embalming procedure. There was no excess fluid anywhere.

Viscera of the Trunk: The liver was not enlarged. Its lower margin was slightly below the costal margin. The gall-bladder was huge, its fundus being almost to the brim of the pelvis. The wall was thickened and light colored. The capacity of the bladder was estimated at 400 cc. and it contained bloody pus. On opening the ducts from below upward a papillomatous tumor mass was found at the junction of the cystic and hepatic ducts extending about 1 cm. above and 2 cm. below this junction. Below the tumor there was some necrotic debris but no bile. Obstruction was complete. The hepatic bile ducts above the tumor were enormously distended, some of them being 2 cm. in diameter. The tumor was papillomatous in character filling the lumen entirely and had also invaded the wall of the duct and its surrounding fat. In the liver substance were numerous typical carcinomatous masses, the largest of which was 2 cm. in diameter. The lymphnodes in the region of the gall ducts and head of the pancreas were enlarged, light colored and firm, evidently the result of metastatic carcinoma. The pelvic nodes were free from tumor. There were no gross changes of interest in the spleen, kidneys, pancreas, adrenals, pelvic viscera, heart nor gastra-intestinal tract.

Throughout the lung tissue on each side there were some nodules varying in size from a few millimeters to 1 cm. On section these were seen to be made up of grayish-white tumor infiltrating the lung and having the characteristics of carcinoma.

All of the viscera are deeply jaundiced.

Microscopic Description: Sections of the bile duct at the site of the tumor show it to be composed of columnar epithelium with a moderate amount of connective tissue stroma. Epithelium, however, was invading the duct wall and had destroyed most of its musculature. Small masses of epithelium could be seen in vessels. There were a few mitotic figures. The cells were quite regular but they were definitely invasive.

Sections of the lymphnode, liver and lung, showed a metastatic tumor growth very similar in character. Here the cells were not so tall and they were a little more irregular; however, there were many definite gland-like structures. At the periphery the tumor was using the normal tissue for its stroma only in the most advanced portions. It quickly formed a connective tissue stroma of its own. There was considerable atrophy of the liver cords. The bile canalicule were congested with bile.

Post-Morten Findings:

1. Primary carcinoma of the bile ducts.
2. Metastasis to liver, lymphnodes and lungs.
3. Complete obstruction of common duct by tumor.
4. Obstructive distension of bile duct with chronic inflammation.
5. Jaundice.

SUMMARY

The tumor was of low grade malignancy as evidenced by its good new stroma and the close resemblance of the tumor cells to normal bile duct epithelium. It was probably slow growing and had been present for a long time. The obstruction in the duct was entirely due to a tumor mass protruding in the lumen. Distension of the gall-bladder was the result of chronic obstruction. The patient's death was attributed to cholemia. The absence of the gall-bladder shadow was perfectly explained by the blocking of the hepatic duct above its junction with the cystic by tumor. It is difficult to explain the record of the nodular mass because the surface of the gall-bladder was perfectly smooth. It is possible, however, that the edge of the liver and the gall-bladder were taken for nodules of the same tumor mass. The nodules in the liver were so small and so well covered by the ribs that they probably were not felt. The cholemia would explain quite well the mental confusion and later stupor and coma in which the patient died.

DR. DUNN: Where did they get that irregular
DR. MILLER: This tumor was certainly in the
tumor described in the record?

DR. MILLER: It was very regular. It is extremely difficult to tell by the palpation of a tumor mass whether it is a solid tumor or a cyst filled with fluid. I don't believe anyone can tell.

DR. DUNN: I think I can in most instances.

DR. MILLER: I don't believe so. Can you, Dr. Roeder, tell whether it is fluid or a cyst?

DR. ROEDER: The tumor in this case was a perfectly smooth gall-bladder.

DR. MILLER: It could have been hard.

DR DUNN: Regularity of contour is the finding essential to the diagnosis of a distended gall-bladder.

DR. ROEDER: How do you account for the metastasis?
blood stream.

DR. ROEDER: How did it get to the liver?

DR. MILLER: I should think that it were bloodborne. This tumor might have gotten into the liver secondarily. No involvement of the pancreas.

DR. DUNN: Given the description of a smooth tumor, I would have discarded any idea of the mass being a carcinoma of the head of the pancreas.

DR. ROEDER: These tumors are small. About the size of a lead pencil.

DR. DUNN: Yes, they are very small. The carcinoma of the common duct was not large.

DR. ROEDER: How do you account for the dye not entering the gall-bladder?

DR. DUNN: No hepatic function. And furthermore, suppose that the liver was secreting it, the dye would have to diffuse in the gall-bladder as bile and be transported through a distended bile-duct system. Another remark I would like to make. The size of the liver was questionable. It seemed to me enlarged.

DR. MILLER: My records say that it was not enlarged. The reason Dr. Dunn feels that it was enlarged was that the liver extended to the 5th interspace. This is the normal place for flatness of the liver.

SUBDURAL ABSCESS OF THE SPINAL CORD, WITH GOOD FUNCTIONAL RECOVERY FOLLOWING OPERATION*

A. E. BENNETT, M. D., and J. J. KEEGAN, M. D.,
Omaha, Nebraska.

Mr. F. S., age 32, was first seen Oct. 7, 1926, at the request of Dr. H. M. Fitzgibbons. The patient's family and past history are unimportant. The patient enjoyed normal health until the fall of 1920 when he developed cervical furunculosis. At this time he received a slight trauma to the left hip region. This was followed almost immediately by severe pain in the left sciatic nerve distribution. This was treated for a month as sciatic neuritis in spite of high fever.

The patient continued to have pain and lameness of the left leg but returned to work. In Sept., 1921, a tumefaction appeared in the left iliac region which was supposed to be a lipoma. This was removed but a discharging sinus remained. This was followed by pain over the left pelvic bone and fever which turned out to be osteomyelitis. Numerous operative treatments were carried out each year until Feb., 1926. Since that time the patient has been free from osteomyelitic symptoms.

About Sept. 1, 1926, the patient developed pain in the upper dorsal region that radiated anteriorly to the mid-thoracic region on the left side. This pain was severe at times and was increased by straining and coughing. On Sept. 27th, the patient first noted some difficulty in walking, this was followed by paresthesias in both legs. These symptoms were progressive and sphincter involvement developed. The weakness of the legs developed into complete paraplegia making the patient bed-ridden. He was admitted to the University Hospital, Oct. 7th.

Physical and neurologic status: The patient had a toxic appearance from his chronic cachexia, but the general visceral examination was essentially negative. A slight febrile reaction and moderate leucocytosis was present. The neurologic examination was normal above the trunk. From the nipple line down on both sides there was hypalgesia and hypesthesia, with the same diminution in sensation in the lumbar distribution of the legs. The sacral segments were unaffected. Motor weakness was marked in both legs. The abdominal reflexes were absent, the knee jerks and ankle jerks were exaggerated. Babinski's toe sign was absent. Vibration and sense of position was lost on both sides. An area of tenderness to percussion was present over the 4th dorsal spinous process.

A combined lumbar and cisternal puncture revealed a complete spinal block. The lumbar pressure reading was 16 mm. of mercury and was not increased by Jugular compression while the cistern pressure was 6 mm. and elevated to 10 mm. by jugular compression. The lumbar fluid was of yellowish color with a total protein content of 450 mgm. per 100 cc. One and one-half cc of lipiodal was injected into the cistern. Under the fluoroscope the lipoidal was seen to settle down to the level of the 4th D. spine, where it divided on either side of the midline but none went past. Thus, the upper level of the block was sharply demarcated.

Upon the history of the chronic recurrent suppurative infection of the pelvic bones, the evidence of infection as shown by fever and leucytosis, and infectious process of the spinal cord seemed probable. From the examination with a definite segmental level of symptoms, the root pain, the presence of a spinal block and the localization shown by lipoidal a diagnosis of abscess affecting the spinal cord at the 4th and 5th dorsal segments was made. It was thought that the abscess was likely to be extradural and the spinal cord symptoms from pressure. In this we were in error.

Operative record: The spines and lamina of the 3rd, 4th and 5th dorsal vertebrae were removed. A subdural mass was found under the 4th and 5th dorsal spines. The dura was incised over this mass and found to be adherent. A small amount of thick staphlococcus pus was drained from the upper angle of the mass. A rubber tissue drain was inserted and the wound closed.

Progress: The patient, after a postoperative shock, made an excellent recovery. Rectal and bladder control returned first and gradually the motor power was regained and the sensory symptoms improved. He walked out of the hospital using a cane about six weeks after admission.

An examination on March 14, 1927, showed evidence of a sensory segmental level by partial loss of tactile, pain and temperature sensation, but very much less than before the operation. The patient still is ataxic in both legs, but the sense of position has improved, the vibration sensibility is still absent. The reflexes are normal with the exception of the abdominals and plantars which are absent. The patient walks as much as two miles a day. The chronic osteomyelitis is quiescent. The residual condition remaining is a mild chronic meningo myelitis with involvement posterior columns producing the ataxic symptoms.

Responding to "The Doctor's Wife", at a medical society meeting, Mrs. R. D. Green of Beaver City, recited the following:

I can't sing a song
  Nor expound words to you,
But some women must talk
  And I am one of those few.
We belong to that order known as Doctor's Wives,
  We are taught by our peers to tell all kinds of lies.
Of "itisis" and "ectomys" we are full to the brim,
  And we're always glad when a new patient comes in
But we've a hum-drum life with meals now and then:
  'Cause he eats some times, but we never know when.
And to our friends we are invited an evening to spend
  When some one's gas pains brings our joys to an end.
When the wheat is dried up and the corn hailed flat,
  Our dreams are all shattered and we don our old hat.
"For collections are poor," says the dear old man,
  "So don't spend too much, but save all you can."
But from sunrise to sunset, from sunset to dawn,
  You doctor men hustle and bustle along;
Always willing to go, ever ready to help,
  All your time is for others and none for yourself.
So we better not growl or complain of our fate
  When the phone rings at night or the dinner is late.
Our troubles like bubbles don't last very long,
  So we smile and be patient while you doctor the throng.

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*Read before the Omaha-Douglas County Medical Society, April 12, 1927.

CARCINOMA OF THE BODY OF THE UTERUS WITH INVASION OF THE PERIUTERINE STRUCTURES BY DIRECT EXTENSION AND METASTASIS TO THE BONES OF THE SKULL AND PELVIS BY THE HEMATOGENOUS ROUTE*

A. F. TYLER, M. D.,
Omaha, Nebr.

MRS. A. P.

This patient first came under our observation on May 19, 1926, complaining of bleeding from the cervical canal. Examination was negative at that time except for slight enlargement of the uterus. The patient being a poor operative risk, radium therapy was employed, following which the bleeding completely stopped.

On November 29, 1926, she again presented herself with a swelling the size of a small egg in the left temporo-parietal region. This was fixed to the cranium and appeared to be bony in character.

X-ray examination of the skull at that time showed an area of bone destruction directly underneath the swelling in the soft tissues measuring about 6 cm. in diameter. This was treated with x-ray with some diminution in the size of the mass.

The patient's history was uneventful from that time until December 15th when she walked into the office supported by a cane and complained of intense pain in the region of the right pubic bone.

X-ray examination showed an area of destruction involving the descending ramus of the right pubic bone and the right ischium in the center of which was a pathological fracture.

Pelvic examination showed ulceration of the anterior lip of the uterine cervix with bleeding coming from the cervical canal. The fundus of the uterus filled the entire pelvis and reached halfway to the umbilicus. The uterus was fixed to the left side of the pelvis.

On December 17th, 1926, the patient was taken with intense pain in the abdomen accompanied by distention and vomiting.

Physical examination showed slight temperature ranging from 99.2 to 100.2. The muscles of the abdominal wall were very tender, especially in the lower half. Later rigidity of the abdominal muscles appeared.

The patient went on until January 6, 1927, at which time death occurred. Post mortem examination was made by Dr. Russum, about which he will speak, showing the gross pathological speciments.

Two films were shown the first showing the area of bone destruction in the right temporo-parietal region, the second showing the destruction in the ischium and pubic bone with the pathological fracture running through the site of the bone destruction.

Autopsy findings by B. Carl Russum, M. D.: Primary carcinoma of the corpus uteri, with extension into and destruction of the left ovary; extensive carcinoma implantations on the visceral and parietal peritoneum; metastases to the spleen, skull, liver, 6th left and 7th right ribs, and right ischium; bilateral hydronephrosis; hydroureter, left; partial stenosis of sigmoid, with adhesions between sigmoid and uterus; passive congestion of the dependent portion of each lung; varicosities of both lower extremities.

Histologically the tumor nodule is a papillary adenocarcinoma in its primary site, with a loss of the papillary characteristics in the metastases.

These findings are of special interest because of the bone metastases, the one in the skull being most interesting. Here a large, opaque, gray nodule raises the periosteum on the outer surface, and pushes the dura ahead of it internally, forming a cup shaped depression in the left frontal lobe about 1 cm. in depth and 2 cm. across its brim. It is not attached to the leptomeninges, and no changes were found in the gross detailed examination of the brain. Bony metastases in carcinoma of the uterus are relatively infrequent.

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*We are indebted to Dr. F. W. Heagey for the privilege of reporting this case.

PATHOLOGICAL INTRAOCULAR TENSIONS

D. D. SANDERSON, M. D.,
Lincoln, Nebraska.

Many members of our ophthalmological societies have placed so much faith in the tenometer as a diagnostic instrument that it seems proper to report briefly three cases only to again call attention to the great variance in normal intraocular pressure in different persons.

At various times I have suggested reasons why I did not consider mechanical instruments useful except as a form of record. For brevity comments as to various examinations and treatment are necessarily omitted as that is not the primary object of this report.

C. H. C., male, age 20, complained of eyes paining. Family history and general examination negative. Teeth and sinuses normal, tonsils out, vision 20/30 plus 25 plus 25 axis 90 20/25 each eye, muscles normal, pupils react slowly to light, tension by fingers considered normal, by tenometer right eye .4, left eye 23. One drop of 2% eserine in each eye contracted the pupils to pin point size. Some discomfort was noticed for about two hours after which time the eyes were perfectly comfortable and the tension with tenometer 19 in each eye. Two years later the same condition recurred the tension by tenometer was 24 with return to comfort at tension 20. One year later the tension was 25 with return to comfort at tension 20. Two years following the tension was 27 with return to comfort at tension 20. One year following the tension was 25 with return to comfort at tension 19. Re-examined recently his tension is 19 with vision 20/20 in each eye without glasses. The field normal.

C. Y. W. female, age 56, complaining of pain in eyes for about one week. General history negative, teeth and sinuses negative. Tonsils atrophied, muscles normal. Pupils react slowly V. O. D. 20/70 plus 1.75 plus 50 axis 180 20/20, left 20/40 plus 1.50 sphere 20/20 no change in correction for eight years, tension fingers plus plus: tenometer 40 each eye eserine 1.M. each eye after two hours reduced the tension by tenometer to 35 each eye: patient perfectly comfortable. A rechecking of tension by tenometer registered 35. At many subsequent examinations it has remained at about 35. The patient has continued perfectly comfortable.

M. C. age 50, had noticed an inability to read comfortably with present glasses wearing plus 50 sphere each eye with plus 1.00 added. Refraction plus 50 sphere each eye 20/20 adding plus 2.00 for near reads Yager 1 comfortably. No plain or discomfort, general history negative. Teeth and sinuses negative, tonsils removed. Muscles normal, tension by finger plus plus, by tenometer 45 as there was no apparent destructive effects as a result of the tension. Either from pain, imperfect vision, destruction of normal formation or changing of field. No medication was advised. After three years of observation the eyes remained perfectly normal, with tenometer reading about 45.

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ADVERTISING IN STATE MEDICAL JOURNALS

State medical journals come nearer to the heart of the individual members of the profession than do the national journals. There is more of the individual appeal to the member, for it is his journal.

The president of the General Motors Corporation has recently said, "No printed matter in the United States is more thoroughly read or has more influence than the pages of the hometown papers", and acting on the proposition General Motors is spending a large sum of money in an advertising campaign through the local papers.

The same is true of state medical journals. Each one contains the local state medical news and is, therefore, the logical advertising medium for the medical profession in that state.

The members of the state association can help improve the value of *The Nebraska State Medical Journal* as an advertising medium by patronizing the advertisers in the Journal and mentioning the Journal in their orders. An exchange has well said, individually we may consider it a small matter, but collectively it is a matter of tremendous importance to your state medical journal.

GROWTH OF WOMAN'S AUXILIARY AND ITS EFFECT ON STATE MEDICAL JOURNALS

The organization of women's auxiliaries in the several states, and the published reports thereof in the medical journals, adds to the interest of doctor's wives in state medical journals.

Many doctor's wives have told the editor that they always read *The Nebraska State Medical Journal* and several have said they read every part of it. The most hopeful sign for the doctor is the wife who is interested in her husband's profession and reads the state medical journal. It follows then, as this writer has heretofore said, that *The Nebraska State Medical Journal* is the doctors' ladies' home journal. Doctors' wives, as well as daughters and office assistants and nurses, are more and more reading the state medical journals; therefore hygienic garments, toilet articles, breakfast foods, gelatines, soaps and household preparations, advertised for the home in the state medical journals, will be read by discriminating women buyers as well as physicians.

Our circulation claims are based on the membership of our state association which is 1228; but if we included the women readers of our journal the number would be increased at least twenty-five per cent. We make no charge for that circulation and are pleased that our advertising patrons secure the advantage of it.

MEDICINE: ITS ACCOMPLISHMENTS AND ITS NEEDS

Jabez N. Jackson, Kansas City, Mo. (*Journal A. M. A.*, May 21, 1927), in the President's address delivered before the American Medical Association at the Seventy-Eighth Annual Session, Washington, D. C., May 17, 1927, says: It is a great privilege to have lived in the present generation. Within its span more has been added to the sum of human knowledge than in any previous period of the world's history. The Golden Age it has been called—the Age of Science. Discovery after discovery has followed in such rapid sequence that the mind of ordinary man is awed with amazement. Fundamental principles of science, slowly comprehended through long periods of time past, have suddenly found practical application beyond even the vision of the dreamer. In the fields of medicine the workings of science have been none the less remarkable, though less obvious to the general eye. When the microscope first enabled us to comprehend the fundamental cellular structure of the body, the key to the ultimate interpretation of life was put in our hands. When Pasteur discovered the existence of other cellular organisms capable of attack on human cells, he gave to our science its first knowledge of the essential cause and nature of much of disease, and the new science of bacteriology was born. Through it pathology found a new interpretation and became a vital study. The culture tube and the reagent brought chemistry into the field, and through the three the laboratory became the center of medical investigation. Brief though the span since the birth of these sciences, their contributions to human welfare have been numerous and of value inestimable. The knowledge of how to prevent many diseases has alone saved to the world countless lives and immeasurable expense. Cholera, which once with its death scythe stalked through nations, has become now but a name. Yellow fever, which almost annually gleaned its thousands of human lives and paralyzed commercial activity, has been driven to the far recesses of Africa, where the few cases reported in the past year evidence its dying gasps. The sanitary control of malaria and other infectious fevers made effective by Gorgas built the Panama Canal and rerouted the commerce of the world. The curative contributions of medical and surgical science have been no less notable, though obviously less noted. The paths of progress have been fairly well blazed, but progress must be ever onward. The laboratory, the hospital and the opportunity for cooperation become henceforth the prime problems of medical practice. County or local hospitals are becoming more numerous year by year. Modern hospitals with laboratories and trained assistance cost money. Forty years ago an endowment of $5,000 was adequate to provide for the support of one bed of hospital service constantly occupied for a year—$300 a year. Today the cost of care of a patient in a city hospital ranges from $4 to $8 a day. This does not include the expense of special nursing or other services of like nature. It does not consider the doctor's service at all. The hospital is the outgrowth largely of a new and scientific medicine. Its necessity and its importance to the community must likewise become generally recognized. If proper character of medical service is required in any community, adequate facilities must be offered to attract proper medical talent to a place where it can render the service to which it has been educated. In this way and in this way alone can rural counties solve the problem of their adequate medical service. For the protection of the middleman, endowment is a necessity — endowment that will at least provide for the expense of purely scientific service, a service which in itself has no direct return; endowment that will equip adequate modern laboratories such as proper service demands; endowment that will provide at least modest compensation for the purely scientific laboratory expert who has no other source of remuneration and yet whose aid is a necessity to all who practice; endowment that will meet the expense which the "Generation of Science" has brought to medical service.

DEPARTMENT OF PUBLIC HEALTH AT STATE FAIR

At the last annual meeting of the State Medical association a committee was appointed to confer with the State Fair board concerning the establishment of a Department of Health to be operated by the State Medical association, which department will coordinate all present state fair features pertaining to public health instruction and disease prevention. Permission was obtained and the work of getting ready for the exhibit is going on apace. A superintendent, recommended by the committee, will be appointed. Our state association appropriated $500, to finance the necessary expense of the exhibit.

Already the cooperation of the two Nebraska medical colleges, of the American Medical Association, of the Nebraska Tuberculosis Association, and of the Red Cross has been obtained. The paleopathological collection of Dr. F. B. Young of Gering, exhibited last year at the Dallas meeting of the A. M. A., will be exhibited. The outlook, therefore, is altogether promising for a good beginning.

Dr. E. R. Hays, Falls City, noted for interest in public health matters, is chairman of the committee.

THE VETERAN DR. I. N. PICKETT, HONORED

Our veteran and honored member, Dr. I. N. Pickett, former president (1912-13), Nebraska State Medical association, was signally honored by the people of the Odell community turning out to observe his seventy-fifth birthday anniversary, the second of July. Dr. Pickett has been practicing his profession in the Odell community for forty-six years. Upward of 250 people gathered at the home to pay their respects and presented a substantial purse in gold to Doctor Pickett in token of the high esteem in which he is held in the community.

The relation of family physician still exists in rural communities and their appreciation of the confidential relationship as expressed in this case is not altogether a memory.

NEW AMERICAN MEDICAL DIRECTORY

For more than twenty years the American Medical Association has been publishing a directory of the medical profession. Ten editions have appeared, the last one (1927) being just off the press.

The first edition (1906) contained 128,171 names of physicians in the United States, its dependencies and Canada. The new Tenth Edition includes 164,002 names. There is an increase of 2,644 over the previous edition. If the Directory were merely a list of names and addresses of physicians it would not have great significance. That information is valuable, but of far greater value is the fact that the Directory gives proof of the right of each physician listed to practice medicine—namely, time and place of graduation and year of license. In addition, society membership, specialty and office hours are included. Capital letters indicate those who are members of their county medical society, and a special symbol follows the names of those who are Fellows of the American Medical Association.

The information concerning hospitals and sanitariums of the United States is another valuable and extensive feature. Descriptive data appears following the names of 7,816 hospitals and sanitariums such as type of patients handled, capacity, and name of superintendent or director.

The list of physicians in each state is preceded by a digest of the laws governing medical practice in that state; members of licensing board; state board of health; names of city, county and district health officers; officers of constituent state associations and component county and district medical societies. The book, in short, is one vast source of reliable data concerning the personnel of the medical profession and the institutions and activies closely related to it. It contains 2,575 pages and is sold for $15.00. Published by the American Medical Association, 535 North Dearborn Street, Chicago.

EDITORIAL PARAGRAPHS

Noguchi believes he has isolated the trachoma germ.

There are seven thousand women physicians in the United States.

The physicians of Akron, Ohio, are reported to have organized an orchestra.

Nebraska is said to have 2,297 inmates at the three state hospitals for the insane.

It has been repeatedly proven that leprosy is not an hereditary, but a contact disease.

Reflecting on the work of the last legislature and of the campaign committee—"Hoch der" Hohlen!

It is stated that Nebraska ranked 14th in the number of small-pox cases in 1926, the number reported being 806, with six deaths.

In these days and nights of auto accidents the first thing one thinks of on waking, Sunday morning, is — "Wonder who was killed last night?"

In Ontario, Canada, only registered physicians and surgeons are allowed to use the designation "Doctor". Osteopaths and chiropractors may not use the designation.

Along comes a pamphlet sounding the praises of denicotinized tobacco; the next day comes another pamphlet declaring that denicotinized tobacco is a creation solely of the imagination. Take your choice.

Dr. A. S. Pinto, Omaha health officer, has instituted a campaign to eradicate diphtheria in Omaha, by 1930. To this end he is enlisting the interest of the profession in toxin-antitoxin immunization.

At the meeting of the Wyoming State Medical Society, June 27-29, the following Nebraskans were honor guests: Dr. A. R. Mitchell, Lincoln; Drs. Harold Gifford, E. L. Bridges, C. W. M. Poynter, Omaha.

A Nebraska rural weekly features the news that the local physician that week was the good genius at his thousandth maternity case. A record to be proud of; but wait until he can multiply that by two and one-half.

An innovation, a complete semester's work for seniors, is being given at the University of Nebraska College of Medicine, during 16 weeks this summer, permitting students to graduate in February, instead of June, 1928.

Dr. W. D. Coolidge, assistant director of the research laboratory of the General Electric Company, and inventor of the Coolidge tube and the Cathode ray tube was awarded gold medals from the Franklin Institute and the American College of Radiology, in May.

Your editor is and should be a sort of Father Confessor for the profession and he should know your foibles and frailties as he can pretty surely read your conceits in your letters. The time may come when intimate knowledge about the people he serves will prove valuable.

In his "Leaves from a War Diary", Major General Harbord records that it took over a hundred freight cars to carry the American Christmas presents sent to the troops in France for Christmas, 1917. This was at a time when they had difficulty to get transportation for needed supplies.

Comparing ourselves, in parallel columns, with our near neighbor, this is the way it looks:

	Nebraska	Kansas
Population	1,396,000	1,828,000
Physicians in State	1,846	2,296
Membership State Ass'n	1,207	1,525
Attendance annual meeting	368	320

Nebraska physicians who by birth, rearing, or education are interested in the history of medical practice in the state of Illinois will be glad to learn that a "History of Medical Practice in the State of Illinois" is now available. It is written by the able editor of the *Illinois Medical Journal* and can be had by addressing him—Dr. Charles J. Whalen, 185 North Wabash Ave., Chicago.

To test the reaction of the profession to the Clinico-Pathological Conference articles appearing in the *Journal*, letters were sent to fifty physicians picked at random, in the state, outside of Omaha, with the result that thirty answers were received of which 27 were unequivocally for a continuance of the articles. The articles will be be continued.

Should a physician in signing his name to a letter use the prefix "Dr."? Hardly. It does not look right, even to a person, who, like Topsy, "just growed". Under certain specific circumstances it may be proper; but such cases must be rare. The suffix "M. D." is much better, when there is need to indicate that the party signing is a medical doctor.

A principle not generally understood pertaining to the duties of a city physician was established recently. A city physician in one of the cities in central Nebraska was called upon to attend prisoners. He contended that as city physician he was health officer of the city, but not jail physician. After much argument and prolonged consideration, the council allowed a bill for services to prisoners.

That *The Nebraska State Medical Journal* has won a place in state and provincial medical journalism may be surmised from the fact that within recent months some of its editorials have been reprinted, properly credited, by *California and Western Medicine, West Virginia Medical Journal,* the *Boston Medical and Surgical Journal, The New York State Medical Journal,* and the *Medical Herald.*

In an address before the Nebraska Academy of Science this spring, Dr. Victor E. Levine stated that "In the 16th century, the expectation of life was 21 years; in the 17th century it was 26; in the 18th century it was 34; in 1890 it was 43; in 1900, 49; in 1910, 51, and in 1920, 55. The 100 year mark will be reached by the year 2,000, if the increase in the span of life continues. There is every indication that it will".

GRATEFUL FOR LIFE

Let this of me be said
When I am dead:
Not that I rose to such a height, or stood
More resolute than others for the good,
But that while life was mine I sang and smiled,
Grew old, but kept the laughter of a child.

Say that I drank life's joy
Much as a boy,
Never grew weary of the charms of earth
Found much each day of fellowship and mirth,
Saw God's own image stamped on every face;
Made friends of men, and not of pomp or place.

This I would have you say:
He loved the day,
The sunrise and the song of birds in spring,
The skies, the trees and every living thing.
And though he met what cares this life must give
He still rejoiced that God had let him live.

—Official Bulletin of the Chicago Medical Society.

OBERVATIONS ON POST-GRADUATE STUDY IN EUROPE

M. B. WILCOX, M. D.,
Hastings, Nebraska.

From the many questions I have received since my return from Europe, relative to the opportunities and conditions for post-graduate study, it seems that no apology is necessary for offering a few of my impressions. As far as my knowledge goes, none of the men in the state who are better qualified than I am to discuss the subject, by reason of their greater familiarity with European clinics, has endeavored to impart information which is apparently of considerable interest to the profession.

During the past winter I spent several months in Vienna, two weeks in Paris and a shorter time in London and although engaged exclusively in eye, ear, nose, and throat work I was able to gather rather general ideas regarding the work in other branches as well, especially in the first two cities mentioned.

From conversation with many men who had studied in all the prominent European clinics, and from my own experience, I am of the impression that nowhere abroad is there better organized and more satisfactory teaching offered in practically every line than in Vienna. This is especially true of the eye, ear, nose, and throat work, the students in these lines far outnumbering those in any other. However, one must spend a certain amount of time any place to discover just where the work is that he desires and how to get it.

In Vienna, practically all of the English speaking doctors study under the auspices of the American Medical Association of Vienna. This organization is of, by, and for, the men who are in actual residence, usually about 150, and is endorsed by the University of Vienna, which issues a diploma to any member of the Association who completes a minimum amount of work over a period of three months resident study. An annual catalogue is published with information on courses and other points of interest and can be obtained by addressing the association at Alserstrasse IX, Vienna, Austria.

With very few exceptions the courses are given in English and the instructors make every effort to present their work in an effective manner. Most of the professors, docents, and assistants at the University clinics derive a substantial part of their income from teaching and there is an actual rivalry to give the men what they want. The teachers who do not deliver the goods in an understandable and practical manner, have difficulty in getting their classes filled.

Classes, as organized through the Association, vary in membership between two and an unlimited number, the cost of instruction, usually $5 per hour, being divided among the men in the class. Cadaver courses, bronchoscopic courses, and others where it is necessary are limited to two members, making the cost of each hour's work $2.50 per man. Clinical courses are limited to a membership consistent with satisfactory intimacy, four to ten men being the rule. Lecture courses admit an unlimited number. The average cost of tuition will run between $100 and $350 a month, depending on the number and character of courses taken.

Courses are usually ten hours long, one hour daily, and may be repeated "ad lib". Some instructors give a series of courses, individually complete, but all part of a general plan. For example, Professor Rutin lectures each evening on the ear, giving five courses of ten hours each, in succession as follows: Clinical Anatomy of the Ear, Functional Testing, Elemental Otology, Advanced Otology, and Intracranial Complications of Otology. I paid as low as $2.22 for the ten hours in one of these courses when the number enrolled was 27. On the other hand, a bronchoscopic course with Haslinger, for two men, where each has a new patient each day on whom to pass the scope, costs $25 apiece for ten hours. A cadaver course with a fresh unembalmed body each day, instruments furnished by the instructor, also costs two men $25 each for ten days.

Hospital service in most any line can be secured by paying a nominal fee. For $10 a month one can work in the pediatric clinic under Von Pirquet, in the eye clinic under Meller, etc., with sufficient clinical material to please the most enthusiastic, and although there is no definite instruction, the work is checked and confirmed by a clinic head.

There is very little major operative work available in Vienna although it can be secured in some hospitals after one is there for a time. Many men, who take the most of their work in Vienna, line up operative work on the living in Budapest or Berlin but the men I talked with who had done so were not overly pleased with what they were able to get.

A fair sized library, with most of the standard medical books, is maintained by the Association so that one need take no books with him. Enrollment cards for each course are posted on the bulletin boards, giving the name of the teacher, the number of students admitted, and the price. Members sign up for the courses they desire, priority rights going to those longest in residence. One of the commonest criticisms heard, is of the difficulty in getting satisfactorily lined up on hours, especially for the first week or two. One must avoid getting two classes going simultaneously or signing for one hour in one clinic with the succeeding hour in a clinic 10 or 15 minutes removed. There is occasional difficulty in getting enough men to sign for a desired course. On the whole, however, the advantages of the system outweigh the disadvantages and there is great freedom of choice in teachers and type of study.

The medical men of Vienna enjoy a reputation as successors to a long line of famous scientists and pioneers, especially in the fields of pathology and diagnosis, and although they do not have a corner on all that is modern and best and although they could profit considerably if they were disposed to appropriate the points at which American medicine excells them, it remains that the inspiration received by contact with new view points and their enthusiasm for true scientific progress, together with the excellent teaching and wealth of clinical material, is of great value to the post-graduate student.

Vienna offers excellent living conditions at prices much below those in larger American cities. One can live for from $15 to $25 a week without sacrificing comfort or pleasure. It is the one city in Europe where Americans are respected and there is very little attempt at the grafting so prevalent throughout the tourist infested regions. The mountain and river scenery within easy reach of Vienna is among the most beautiful in the world, and the musical, artistic and historical interests are scarcely exceeded anywhere else. A knowledge of German adds a great deal to the pleasure of Vienna life but is not at all essential as English is spoken on every hand.

My experience in study at Paris was limited but much less satisfactory. The course in eye surgery under Professor Morax was mostly given in French, old formalin preserved cadavers were used, and had it not been for the opportunity of seeing Morax and one or two other men work, I would not have considered the time profitable. The operative clinics of all the public hospitals are open to visiting doctors, however, and I was unable to form a dependable opinion of work in other lines. There is an excellent opportunity for long term eye work at the Royal London Ophthalmic Hospital. I was unable to investigate any other London Clinics.

KANSAS CITY ANNUAL FALL CLINICAL CONFERENCE AND THE INTER-STATE POST-GRADUATE MEDICAL ASSOCIATION

Kansas City, Mo., October 17th to 22nd, 1927.

Pre-Assembly Hospital Clinics
Friday and Saturday, October 14th and 15th.

Inter-State Post-Graduate Assembly
Monday to Friday, October 17th to 21st, inc.

Scientific Program

Pre-Assembly Clinics at the hospitals of Greater Kansas City upon Friday and Saturday mornings (October 14th and 15th). Scientific programs and ambulatory clinics each afternoon at Muehlebach Hotel. Dr. J. Shelton Horsley of Richmond, Va., is a special guest upon Saturday afternoon (October 15th); Subject: "Peptic Ulcer", illustrated.

The intensive program of the Inter-State Assembly will begin Monday, October 17th, at 7:00 a. m., and continue morning, afternoon and evening, until the banquet in honor of the distinguished guests upon Friday evening (October 21st).

Taking parts on the program will be 16 distinguished honor guests from Europe and 46 of the most noted American physicians representing 11 specialties. Space precludes publishing the names, but the statement above given is sufficient guarantee of the eminence of the talent.

Social Calendar

Friday, October 14th—8:00 p. m.: Smoker and Get-together. (Muehlebach Hotel).

Saturday, October 15th—7:00 p. m.: Alumni Dinners. (Hotels and Clubs).

Sunday, October 16th, 7:00 p. m.: Buffet Supper (Informal). Mission Hills Country Club — for Distinguished Guests, Sponsors and Visitors.

Tuesday, October 18th, 1:00 p. m.: Luncheon for visiting ladies.

10:00 p. m.: Formal Reception to Distinguished Foreign Guests. (Grand Ball Room—Muehlebach Hotel).

Wednesday, October 19th, 1:00 p. m.: Luncheon for Ladies at Women's City Club. Dr. Wm. D. Haggard and Dr. Jos. Colt Bloodgood as special guests.

Thursday, October 20th, 2:00 p. m.: Automobile Drive for ladies and distinguished guests, starting at Muehlebach Hotel, Baltimore Avenue.

Friday, October 21st, 7:00 p. m.: Banquet to Distinguished Foreign and American Guests — Muehlebach Hotel—Grand Ball Room. (Positively limited to 500).

THE SOCIETIES

At the semi-annual meeting of the **Third Councilor District Medical Society**, Table Rock, June 27, Dr. H. E. Potter, Fairbury, president of the Nebraska State Medical Association was honor guest. Following is the program:

"Prenatal Care", Dr. I. W. Irwin, Auburn; "Intravenous Therapy", Dr. J. C. Waddell, Beatrice; "Mechanism and Treatment of Infections of the Face", Dr. Russell Best, Omaha; "How You Should Conduct Health Examinations", Dr. A. D. Dunn, Omaha; "Our State Association", Dr. H. E. Potter, Fairbury; "Fractures of the Lower End of the Radius" (with lantern slides), Dr. J. W. Duncan, Omaha; "Treatment of Eclamptic Convulsions", Dr. L. R. Harmon, Pawnee City; "The X-ray and the General Practitioner", Dr. W. A. Rush, Beatrice.

The Cedar, Dakota, Dixon, Thurston and Wayne Counties Medical Society held a meeting in Emerson on June 23, at which time the following papers were read and enjoyed by the goodly number of physicians present: "A Retrospect and Prospect" by Dr. John Buis of Pender, which dealt with the past, present and future of the practice of medicine in rural Nebraska; "Thrombo-Angiitis Obliterans" by Dr. A. E. Cook of Randolph; "Hemorrhage in the Newly Born" by Dr. S. M. Weyer of Wakefield and "The Country Doctor and his X-Ray", by Dr. G. E. Peters of Randolph, the latter paper being illustrated by pictures the doctor brought with him.

—C. L. Phillips, Secy.

The Madison "Four Counties" Medical Society met at the Nehoco hotel, Neligh, June 22, President Frank Salter, Pierce, in the chair. Forty-five medical and dental doctors and their wives were present. Following the dinner the ladies had a meeting of the Auxiliary. The physicians and dentists were entertained by an illustrated lecture on sterility of the female by Dr. Earl C. Sage, Omaha, and a lecture by Dr. Frank Conlin, Omaha, on coma and gangrene as complications of diabetes. Both addresses were presented in a manner to be very interesting and the members voiced the sentiment that the meeting was one of the best ever held.

The Otoe County Medical Society meeting July 11, following a dinner at the Frontier hotel, Nebraska City, had the following program: Dr. E. G. Davis, Omaha, spoke on "Care of Prostatic Hypertrophy"; Dr. M. L. Koser, Nebraska City, read a paper on "Some Obstetrical Problems" and Dr. A. J. Brown, Omaha, spoke on "Classification of Thyroid Diseases".

HUMAN INTEREST TALES

The new Stuart hospital, at Stuart, is about ready for occupancy.

Dr. and Mrs. A. E. Wanek, Loup City, have gone on a western trip.

Dr. and Mrs. B. F. Bailey, Lincoln, are motoring to Carmel, Calif., this summer.

Dr. G. A. Langstaff, Blair, after completing fifty years of practice, has retired.

Dr. Robert E. Harry, former Omahan, has become associated with the York clinic.

Dr. D. H. Carson, formerly of Grand Island, has gone to McAllen, Texas, to locate.

Dr. E. W. Rowe, Lincoln, was elected president of the Anti-Saloon League recently.

Dr. J. E. Gelow and Miss Clara L. Harris, Grand Island, were married June 28, 1927.

Dr. and Mrs. Clyde Moore, Omaha, spent their vacation in the Minnesota lake district.

Dr. A. B. Tashjean, Norfolk, retired physician, is sojourning at Thermopolis, Wyoming.

Dr. and Mrs. G. H. Gilmore, Murray, motored to the Black Hills region in early July.

Dr. and Mrs. F. W. Heagey, Omaha, spent a part of the early summer at Meeker, Colo.

Dr. and Mrs. J. F. Langdon and the three sons spent a short vacation at Lake Okoboji.

Dr. R. C. Byers and family, Fremont, motored to the Muskoka lakes in Ontario in July.

Dr. and Mrs. W. L. Curtis, Lincoln, spent a month on the Pacific coast in early summer.

Dr. and Mrs. George F. Simanek, Omaha, made a trip to southern California during July.

Dr. Frank Conlin, Omaha, took a short postgraduate course in Chicago, in early summer.

Dr. and Mrs. J. Stanley Welch, Lincoln, returned from a trip around the world in mid-July.

Dr. L. A. Johnson, Plainview, spent some time this summer in postgraduate study in the east.

Dr. J. R. Taylor, Sidney, spent the month of July visiting the Mayo clinic and Chicago clinics.

Dr. C. W. Fogarty, formerly of Omaha, has become associated with Dr. E. J. Gillespie, Fullerton.

Dr. Warren Thompson, Omaha, motored to Colorado, Wyoming and the Black Hills in early July.

Dr. E. K. Langford, former Omaha practitioner, is the surgeon with the MacMillan Arctic expedition.

Dr. W. T. Eikner and family, after a year's absence on the Pacific coast, have returned to Sidney.

The marriage of Dr. Alfred E. Mailliard, Osmond, and Miss Claire McCormick, Lincoln, is announced.

Dr. and Mrs. David C. Hilton, Lincoln, returned early in July from a study and pleasure trip in Europe.

The marriage of Dr. G. R. Zarbaugh, Dalton, and Miss Anna Grace Kuzy, Wilbur, took place June 30, 1927.

The Chadron physicians have organized a local medical club and are talking and working for a hospital.

Dr. Paul A. DeOgny, Milford, lectured to the boys at Camp Sheldon on "Sanitation in the Swimming Pool".

Dr. E. R. Hays, Falls City, has been appointed special health officer for school children of Richardson county.

Dr. F. L. Rogers, Lincoln, has become associated with Dr. George Covey in the practice of internal medicine.

Dr. and Mrs. E. C. Foote and children, Hastings, spent the month of July in Cache le Poudre canyon, Colorado.

Dr. and Mrs. James Watson of Porto Rico, visited with Dr. and Mrs. R. S. Wycoff, Lexington, some time ago.

Dr. and Mrs. G. W. Dishong, Omaha, returned from a motor trip to Washington, D. C., and New England, July first.

Dr. and Mrs. M. N. Newquist, Bloomfield, enjoyed a motor trip to Minnesota the last part of June and early July.

Dr. Robert D. Schrock, Omaha, spent some time at San Francisco and other Pacific Coast points early in summer.

Dr. May Flanagan, Green Gables Sanatarium, was elected president of the Lincoln Altrusa club for the current year.

Dr. L. A. Swanson, Hastings, and Miss Betty Jane May, Los Angeles, were married in Los Angeles, May 24, 1927.

Dr. and Mrs. Frank Hamilton and family, Friend, took their vacation by motoring through the eastern states in June.

Dr. Carl Ballard, former Omaha x-ray man, now located at Santa Monica, Calif., is spending the summer in Vienna.

Dr. and Mrs. Harold Mulligan, Hastings, have returned from Vienna where the doctor has been studying the past year.

Dr. C. F. Chapman, health officer of Lincoln, has been granted a six months' leave of absence on account of ill health.

Dr. Sophia Warner has located at Bloomington, after a year spent at Johns Hopkins, in the department of obstetrics.

Dr. E. E. Cone, Oxford, who had to relinquish practice for a time during the early summer due to ill health, is again on duty.

Dr. and Mrs. Clyde Roeder, Omaha, recently entertained Drs. J. J. Pemberton, E. Starr Judd and R. D. Mussey, of the Mayo clinic.

Dr. E. Holovtchiner, and daughter, Omaha, have gone to Europe, the principle objectives being the Mediterranean and Near East points.

Dr. and Mrs. Paul A. Reed and baby, Deshler, were victims of an auto collision several weeks ago. Fortunately no serious injuries resulted.

Dr. and Mrs. D. J. Bowman, Lincoln, spent the month of July on a vacation trip that included the inter-mountain and west-coast cities.

Dr. F. A. Long, Madison, gave the graduation address to the senior class at the Green Gables Sanitarium Training School for Nurses, July 7th.

Dr. Raymond B. Burr, recent intern, Wise Memorial hospital, Omaha, has purchased the equipment of Dr. Langstaff, Blair, and has located there.

Dr. J. F. Beynon, until recently connected with the state hospital at Weston, W. Va., has become a member of the staff of the Norfolk State hospital.

Dr. A. C. Schoch, formerly of Hebron, has returned to that place since the death of Dr. Arthur Bowles, and has taken active charge of the Blue Valley hospital.

Major W. A. Hagins, Army Medical corps, and Miss Helen Broady of Nemaha, were married recently and will be located at Edgewood Arsenal, near Baltimore.

Dr. and Mrs. Frank Plehn and Dr. and Mrs. E. E. Griggs, Scottsbluff, motored to Cheyenne to attend the Wyoming State Medical Society meeting the last days of June.

Dr. and Mrs. Ole Olson, Lincoln, went to Chicago the last of June and from there to St. Paul, where the Doctor served two weeks in the training camp at Ft. Snelling.

Miss Gladys Kindred of Meadow Grove was graduated from Rush Medical College this spring. Since then she has been married to Mr. J. T. Dolan, an attorney, and will live in St. Louis.

Dr. E. F. Scheidigger of the faculty of the University of Nebraska College of Medicine was locum tenans for Dr. John D. Lutton, Laurel, during part of June and July.

Dr. and Mrs. J. E. Spatz, Medford, Oregon, visited at Fairfield and other Nebraska points and attended the annual meeting of the Nebraska State Medical association in May.

Alfred H. Griess, of Sutton, graduated from the University of Pennsylvania College of Medicine this spring and will serve an internship in the Philadelphia General hospital.

Dr. A. R. Marstellar and family, Wilcox, motored to Colorado in July, in his special home on wheels. The Doctor is said to have devised and built a very comfortable house car.

Dr. Edward Katskee, Omaha, intern at the King's County hospital, New York City, was one of three Jewish intern victims of hazing by the other interns of the hospital recently.

Dr. Frances Barnhart Dolldorf, daughter of an Omaha couple, after completing a two years' internship at Bellevue hospital, New York, has been appointed resident physician.

Thomas Palmer Findley, Jr., son of our well known Dr. and Mrs. Palmer Findley, graduated from Rush Medical college this spring and has taken an internship at the University hospital, Philadelphia.

Dr. Blanche Haines, director of the division of maternity and infant hygiene in the children's bureau at Washington, spoke in Lincoln and Omaha to people interested in welfare work, in early July.

A farewell supper was given in honor of Dr. and Mrs. E. M. Stewart at the Methodist church, Imperial, on the eve of their departure. Dr. Stewart has practiced his profession at Imperial for 26 years.

Dr. and Mrs. F. L. Frink, Newman Grove, are visiting on the northwest coast. They started from home with a house car, but had to abandon it owing to washouts in the Black Hills region of South Dakota.

Dr. and Mrs. F. A. Long, Madison, entertained the members of the local medical profession and their wives at a dinner, June 27, in commemoration of the forty-fifth anniversary of Dr. Long's location at Madison.

The inland village of Martinsburg, recently gave a reception to Dr. John Joe Melvin, recent graduate in medicine, he being the first young man in the sixty years' history of the community to rise to the level of a high profession.

Dr. C. H. Longacre, physician at Eagle for 19 years, has relinquished his local interests to Dr. E. M. Stewart, formerly of Imperial. Before leaving the village of Eagle four hundred friends and neighbors tendered Dr. Longacre and wife a reception.

Dr. O. C. Hopper, Stanton, has been made the defendant in a novel damage suit resulting, it is said, from the Doctor backing his car against a man who had just pulled him out of a ditch. Ten thousand dollars, it is contended, will salve the injuries.

Dr. and Mrs. E. E. Koebbe, Columbus, spent the month of June in Chicago, where the Doctor, as a member of the medical reserve corps, was given a two weeks' special course. Returning, they motored through Michigan, Wisconsin, Minnesota and South Dakota.

Dr. Alan Moritz, a Lincoln product, after spending three years at Western Reserve University, spent a year in Vienna studying bone pathology under Professor Erdheim, has returned to this country and is about to have published a work on "Syphilitic Joint Changes".

NECROLOGY

David Isaacs, Omaha; Nebraska University, College of Medicine, 1903; interne, Methodist Hospital, Omaha, two years; practitioner at Winside, Nebraska one year; pursued special studies in eye, ear, nose and throat diseases abroad for two years; practiced his specialty in Omaha since 1908; member, Nebraska State Medical Association; died at Rochester, Minn., June 25, 1927, aged fifty years.

Quillan A. Kerley, Randolph, Nebr.; Barnes Medical College, St. Louis, 1900; well known practitioner at Randolph since graduation; member, Nebraska State Medical Association; died in a Sioux City hospital following an operation for gastric ulcer, aged 56 years.

Robert Damerell, Red Cloud, Nebr.; Rush Medical College, 1882; widely known practitioner at Red Cloud since 1882, with the exception of four years spent as superintendent of the Hastings State hospital; member Nebraska State Medical Association; man of affairs, deeply interested in community and welfare work; sometime mayor of Red Cloud; died June 23, 1927, aged 75 years.

Frank E. Coulter, Santa Ana, Calif.; Rush Medical College, 1882; widely known neuropsychiatrist at Omaha for thirty-five years, most of the time professor of nervous and mental diseases at Creighton University College of Medicine; prominent member of the Nebraska State Medical Association until he left the state for California five years ago; resident of Santa Ana, Calif., the last five years with office in Los Angeles where he practiced as a consulting neuropsychiatrist; died July 17, 1927, aged sixty-seven years.

BOOK REVIEWS

ANNUAL REPRINT OF THE REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR 1926. With comments that have appeared in The Journal. Cloth. Price, $1.00. Pp. 73. Chicago: American Medical Association, 1927.

Those who are interested in the work of the Council on Pharmacy and Chemistry, and this includes all who have to do with the therapeutic use of drugs, look forward each year to the volume which gives the reasons for the Council's rejection of the preparations found unacceptable for inclusion in New and Nonofficial Remedies. These reasons are given in the Annual Reprint of the Reports of Council on Pharmacy and Chemistry; in addition the book gives the reasons for the omission of certain preparations from New and Nonofficial Remedies during the year, and contains several special reports of a general nature authorized by the Council for publication.

Reports are given on the following articles found not acceptable for New and Nonofficial Remedies: Allonal, Animasa, three benzyl benzoate preparations, Ceanothyn, Cresog, Firma Chloro, Idozan, Malt Nutrine, Murarsenide, Naftalan, Neo-Reargon, Nontox, Numoquin, Oleosolution, "Pabst Extract—The 'Best' Tonic", Phenoseptine Cones and Phenoseptine Powder, Pollen Antigen Spring Type-Lederle, Rad-X-Solution A and Rad-X-Solution B, Robes' Antirheumatic Injection, Sodium Methylarsenate (De Marsico), Ster-Alco, Sulcitacium, Tetradol, Thymo-Borine, Toxivi, Toxok, and Triophos. Besides these there are reports on a number of articles that have been omitted from New and Nonofficial Remedies.

The volume also contains the following special reports of current interest to physicians: A report on the status of bacillus acidophilus and bacillus bulgaricus therapy, on the basis of which the N. N. R. article on Lactic Acid-Producing Organisms has been revised and rewritten; a report dealing with the esteem in which antistreptococcus serum is now held by leading surgeons, gynecologists and obstetricians, prepared by Dr. Emil Novak on the basis of the answers to a questionnaire sent to representative members of these groups; and a preliminary report on the status of the new drug Ephedrine.

NEW AND NONOFFICIAL REMEDIES, 1927, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on Jan. 1, 1927. Cloth. Price, postpaid, $1.50. Pp. 473, XLVII. Chicago. American Medical Association.

The appearance of the annual edition of New and Non-official Remedies is looked upon as an event among all those interested in drugs and their therapeutic use. The text is so carefully scrutinized and revised each year by the various members of the Council on Pharmacy and Chemistry that each issue is essentially a new book, a safe guide to the frontier that lies between the official drugs and the latest preparations launched by the pharmaceutical manufacturers. The mechanism of the book is excellent: Each preparation is classified, and each classification is preceded by a general and critical discussion of the group by one who is an authority on the subject; there is an exhaustive index not only to the contents of the book, but also, separately, to the literature concerning the host of preparations that the Council has found unacceptable for inclusion. A glance at the book shows that the most important single revision this year is that of the general article on Lactic Acid-Producing Organisms, which has been radically revised and rewritten to show the present status of therapy in this field. Further perusal shows that many preparations have been omitted. The preface explains that many of these have been omitted because the manufacturers or distributors have not presented evidence to demonstrate their continued eligibility. Some have been omitted because they have become official articles by inclusion in the tenth edition of the U. S. Pharmacopeia; such articles, when marketed under the pharmacopeial name or synonym, and without special claims, do not require description in New and Nonofficial Remedies.

Among the preparations newly admitted to the book are: Isacen, a product related to phenolphthalein; Ipral, a barbital hypnotic; a cod liver oil concentrate having a definite vitamin A and vitamin B potency; and three erysipelas streptococcus antitoxin preparations.

New and Nonofficial Remedies is indispensable to any physician who prescribes drugs. It contains information about medical products which cannot be found in any other publication.

In Memoriam

Alas for him who never sees
The stars shine through his cypress-trees!
Who, hopeless, lays his dead away.
Nor looks to the see the breaking day
Across the mournful marbles play!
Who hath not learned, in hours of faith,
The truth to flesh and sense unknown,
That Life is ever Lord of Death,
And Love can never lose its own!

—Whittier.

* * *

William S. Fast	June 27, 1926
Charles S. Minnich	July 4, 1926
Oscar S. Hoffman	July 26, 1926
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A. A. Holtman	October 10, 1926
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THE DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS OF GALL-BLADDER DISEASE*

JOHN MILLS MAYHEW, M. D.,
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Next to the appendix, the gall-bladder is the most vulnerable organ in the abdomen. Several decades ago, the attention of abdominal surgeons was so completely focused on appendicitis that the study of the gall-bladder and its diseases suffered by comparison. Today, however, the gall-bladder is universally recognized to be one of the most serious mischief-makers in the abdominal cavity.

The gall-bladder is subject to infection from three sources. In systemic diseases, such as typhoid fever, or focal infection arising from diseased tonsils or teeth, the microorganisms are carried directly to the walls of the gall-bladder through the blood stream. There they find a suitable soil for their proliferation. Another frequent source of infection is through the bile. Pathogenic bacteria present in the blood stream are eliminated in large numbers through the bile. When this heavily infected bile stagnates in the gall-bladder, drainage is largely impeded by reason of the fact that the outlet of this viscus is higher than its cavity and the lumen of the cystic duct is extremely tortuous; thus it is inevitable that the infection should travel from the bile to the walls of the gall-bladder. The third and least common route by which the gall-bladder is involved is as an ascending infection from the duodenum.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

COMMON TYPES OF GALL-BLADDER DISEASE

The most common type of gall-bladder disease is a low-grade infection in the form of a chronic or subacute cholecystitis. This smoldering infection gives rise to but little trouble until an acute flare-up occurs; then the patient has an acute attack of fever, vomiting, pain and tenderness in the region of the gall-bladder, and possibly jaundice.

During the course of a long-standing low-grade inflammation of the gall-bladder, large numbers of gallstones may be formed in the cavity of this viscus. We all know how common it is to find a gall-bladder filled with gallstones in a dissecting-room cadaver who, during his lifetime, never complained of symptoms to suggest gall-bladder disease. And this experience is in accord with the general clinical rule that gallstones do not give rise to symptoms so long as they stay in the gallbladder but only when they become impacted in the ducts.

As a result of chronic irritation from the stones and the lowering of the tissue resistance by the constant presence of low-grade inflammation, carcinoma of the gall-bladder may be the final outcome of cholelithiasis and cholecystitis. In Lentze's(1) series cancer of the gall-bladder occurred in 5.1 per cent of women over 39 years of age suffering from gallstones. This percentage is practically identical with that obtained by the Mayo brothers(2).

Another serious surgical disturbance is empyema of the gall-bladder, a condition that occurs when a virulent acute infection is superimposed upon chronic low-grade inflammation of the gall-bladder wall.

Other diseases of the gall-bladder of rarer occurrence could be mentioned, but the scope of the present paper precludes a discussion of any but the most common disturbances.

HISTORY MOST IMPORTANT IN DIAGNOSIS

In the diagnosis of all gall-bladder conditions, the history is the most important single factor in reaching a conclusion. In fact, the diagnosis is usually made principally on the history; the evidences of the physical examination and the laboratory findings are adduced for their corroborative value.

The most characteristic symptom of gall-bladder disease is the attack of biliary colic. The typical paroxysm sets in without warning and without apparent cause. The victim is seized with sudden excruciating pain at the lower margin of the right ribs, radiating to the right side sometimes as far as the scapula or the shoulder. This pain is one of the most terrible known, being exceeded only by that of angina pectoris.

Regardless of the findings at operation, the presence of biliary paroxysms is of great significance. Judd(3), of the Mayo Clinic, on the basis of a study of 400 cases, believes that, if a patient has a typical history of gall-bladder disease with characteristic colicky pain, he will be relieved of his symptoms if the gall-bladder is removed, whether or not the latter shows recognizable disease at operation.

In about 50 per cent of cases of gallstone colic, there is accompanying jaundice. This combination, of course, clinches the diagnosis at once. But, even in the absence of jaundice, the seizure of biliary colic is so typical that it can rarely be mistaken for other conditions.

There may be a history of jaundice even in cases without stones. Blalock(4) obtained a positive history of jaundice in 91 per cent of cases with stones in the common duct, in 44 per cent with stones in the gall-bladder or cystic duct, and in 37 per cent without stones.

In many cases of cholecystitis and cholelithiasis, the patient enjoys good health between the attacks. On the other hand, there may be more or less constant "indigestion" in the intervals. These gastric symptoms may focus undue attention on the stomach and lead the physician to overlook the fact that the gall-bladder is the underlying cause, unless he adopts the practice of first ruling out gall-bladder disease in every case of "indigestion" or "dyspepsia".

Blackford and Dwyer(5), in a series of 1650 cases in which gastric symptoms constituted the chief complaint, found that dyspepsia was due to gall-bladder disease in nearly 20 per cent of all cases. In fact, cholecystitis out-ranked cancer of the stomach, appendicitis and duodenal ulcer in numerical importance as a cause of gastric symptoms.

The gastric symptoms of gall-bladder disease are probably of reflex origin. Essentially the mechanism is the same as for the production of digestive complaints in chronic appendiceal disease.

A common complaint is a sense of fulness after eating, accompanied by persistent gas formation and belching. There may be heartburn and water brash or other symptoms of an acid stomach, even nausea and vomiting. Sometimes the stomach complaint is the only trouble that can be elicited in the history, which may be entirely negative for symptoms pointing directly to the gall-bladder.

Subacute attacks of pain in the right subcostal region are common in gall-bladder patients. They may be so slight that the patient does not mention them, unless he is questioned directly. There are no seizures of severe pain, but prolonged spells of dull, throbbing discomfort in the region of the gall-bladder. Any jarring motion, such as is occasioned by riding in an automobile or a trolley-car, greatly aggravates this discomfort. A chologogue often brings about considerable relief.

Most cases of gall-bladder disease have their origin in youth or early adult life, but it is usually not until the patient is well on his way toward middle age that effective treatment is instituted. It is no uncommon experience for an unfortunate with gall-bladder disease to spend many years undergoing futile treatment for "nervous indigestion", "flatulent dyspepsia" or some other meaningless condition. The great lesson to be learned from this discussion is that cholecystitis is one of the most common causes of gastric disturbances.

Less common symptoms of gall-bladder disease include loss of weight and strength, pallor and sallowness, poor appetite, and occasionally a history of a lump in the abdomen. A rather characteristic statement from a gall-bladder patient is to the effect that, although he fells hungry, he is afraid to eat. This dread of pain is ample testimony of the severity and reality of the attacks of colic.

PHYSICAL EXAMINATION UNCERTAIN

The results of physical examination in cases of gall-bladder disease are notoriously uncertain and unreliable. In most cases of chronic cholecystitis, the gall-bladder is not enlarged but contracted and shrunken; consequently the viscus is rarely palpated through the abdominal wall.

The most frequently observed sign is tenderness under the costal margin at the site of the gall-bladder. When present, this finding helps in the diagnosis; but one must not draw inferences from the absence of such tenderness. Neither should the diagnosis be based on the presence of tenderness, unless the history is strongly suggestive of cholecystitis.

There may be increased muscular resistance at the right costal margin, as compared with the left side. This tension may be accompanied by greater tenderness on firm palpation. But even these indefinite signs are not constant. They may be present at one examination but absent at the next. Tenderness and rigidity are most likely to be present after an attack of biliary colic; they are seldom observed during the quiescent intervals.

It is important to examine the patient carefully for jaundice during the period of the painful attacks. On casual examination he may not appear jaundiced; but oftentimes a slight icteric tint of the conjunctivae will disclose the fact that the paroxysms arise from gall-bladder disease.

In general, it may be stated that the evidences furnished on physical examination serve to confirm the history, but that neither their presence nor their absence offers conclusive testimony.

LABORATORY TESTS OF CORROBORATIVE VALUE

There is no single laboratory test of diagnostic value in the recognition of gall-bladder disease. However, such tests furnish corroborative evidences that support a diagnosis based on the history.

There are two positive findings with reference to the gastric juice that suggest disease of the gall-bladder; namely, (1) the presence of definite amounts of bile in the fasting contents and (2) a clean achylia gastrica. Under normal conditions, bile is discharged into the duodenum only in response to the taking of food. When it is found in the fasting stomach, the condition may be ascribed to a reverse peristalsis of the duodenum, causing regurgitation. This disturbance arises most commonly from adhesions between the gall-bladder and the duodenum.

Achylia gastrica is found more commonly in cholecystitis than in any other disturbance outside of the stomach. In about 50 per cent of cases of cholecystitis, there is either marked hypochlorhydria or else total achlorhydria. This finding was observed in 45 per cent of a series of 192 cases of gallstone disease studied by Gatewood(6). The deficiency of secretion is believed to result from a gastritis that accompanies the gall-bladder disease.

Examination of the stool rarely yields information of value. Following a paroxysm of pain, the feces may be clay-colored. This finding, of course, indicates obstruction of the common or hepatic duct. At the same time, the urine is usually highly colored and tests show the presence of bile, pigment and salts. To search the stool for gallstones is a waste of time.

THE MELTZER-LYON TEST OF DISPUTED VALUE

Of recent years there has been much discussion with regard to the use of the Meltzer-Lyon test in the diagnosis of gall-bladder disease. Meltzer, in 1917, made the observation that the introduction of a solution of magnesium sulphate into the duodenum causes a relaxation of the sphincter of the common bile duct in the ampulla of Vater and a flow of bile into the duodenum. Following this suggestion, Lyon developed a plan of diagnosis and treatment of gall-bladder affections by non-surgical biliary drainage.

By means of a duodenal tube, 50 c.c. of a saturated solution of magnesium sulphate are introduced. Soon afterward, a quantity of dark, thick bile may be withdrawn; this is assumed to come from the gall-bladder and biliary ducts. After a time the bile withdrawn through the duodenal tube becomes thinner and lighter, and this paler bile is supposed to come directly from the liver. The bile from the liver and gall-bladder, respectively, has been subjected to careful physical, chemical and bacteriologic study, and numerous inferences have been drawn from these findings. However, many research workers and clinicians seriously doubt whether gall-bladder bile can be separated from liver bile, and even Meltzer's original observation has been disputed. Since there is still so much controversy regarding the value of the Meltzer-Lyon test, the majority of clinicians hesitate to use it for diagnostic purposes.

X-RAY STUDY AND CHOLECYSTOGRAPHY

Prior to 1925, the roentgenologic study of the diseased gall-bladder was not very satisfactory. Direct evidence in the way of changes in the shape of the gall-bladder or the presence of stones was available in only about half the cases; and, unfortunately, what was thought to be a shadow of the gall-bladder often turned out at operation to be nothing of the sort. Because of the technical difficulties in visualizing the gall-bladder and interpreting its shadows, there was a large margin of error connected with the x-ray study of this organ.

Graham and Cole(7), in 1924, recommended the intravenous injection of tetrabromphenolphthalein in order to make the gall-bladder accessible to x-ray study. Whitaker(8), in 1926, reported on the use of tetra-iodophenolphthalein for this purpose, and this latter compound seems preferable. Sodium tetra-iodophenolphthalein is secreted almost exclusively by the bile and, being opaque to x-rays, throws a sharply outlined shadow that accurately portrays the contour of the gall-bladder. McCoy and Graham(9), in a series of twenty-six consecutive operative cases, were able to confirm the cholecystographic diagnosis in 96 per cent of cases. This form of cholecystography promises to be of great value in the diagnosis of abnormal conditions of the gall-bladder.

In addition to the direct findings of deformity of its outline and the presence of calculi, the gall-bladder may give indirect evidence of disease by its effect on adjacent structures. The most important indirect evidence of cholecystitis is deformity of the duodenal cap, brought about by the pull of adhesions surrounding the inflamed gall-bladder on the duodenum. Other indirect x-ray evidences may include reverse peristalsis of the duodenum, displacement of the stomach to the right, and high fixation of the hepatic flexure of the colon.

DIFFERENTIAL DIAGNOSIS

The conditions most commonly confused with gall-bladder disease are functional derangements of the stomach. Too often, when a functional disturbance such as achlorhydria is found, one is content to accept that diagnosis; and then an underlying cholecystitis may easily be overlooked.

It may be taken as a general rule that, when a marked deficiency of the secretion of hydrochloric acid is detected, one should always hold the gall-bladder under suspicion, unless some organic disease of the stomach or systemic disease such as pernicious anemia is present to account for the hypoacidity. In a considerable percentage of cases of cholecystitis, attacks of biliary colic and jaundice are either absent or not prominent, and our chief reliance must be placed upon the gastric symptoms.

Organic disease of the stomach is usually not difficult to differentiate. In carcinoma, there is the filling defect on x-ray examination. In ulcer of the stomach or duodenum, the persistent niche or the distortion of the duodenal cap usually makes the diagnosis clear. Then, too, the retention of gastric residue in cancer in contrast with the clean achylia of gall-bladder disease and the excessive acidity in ulcer furnish important differential points.

Chronic appendicitis may simulate gall-bladder disease by giving rise to recurring attacks of abdominal pain with persistent stomach disturbances in the intervals. As a rule, however, the location of the pain is in the right lower quadrant instead of the right upper one, and tenderness and rigidity are in the inguinal fossa instead of at the lower margin of the ribs.

Attacks of pain referable to the right kidney may simulate gallstone colic and lead to the suspicion of gall-bladder disease. As the result of a prolapse of the kidney and a kink in the ureter, typical Dietl's crises may occur, with excruciating pain on the right side of the abdomen. In this condition, however, the pain is referred downward toward the genitals instead of in the direction of the right shoulder. Furthermore, roentgenologic examination of the pelvis of the kidney and the ureter discloses the true origin of the paroxysms.

Various nervous disturbances are sometimes overlooked and an erroneous diagnosis of gall-bladder disease thus made. The gastric crises of tabes suggest gallstone colic; but the absent knee-jerks, Argyll-Robertson pupils and ataxia readily disclose the true condition. Intercostal neuralgia involving the right hypochondriac region may offer similar difficulties; but, as soon as the rash of herpes zoster appears, there can be no further doubt. The spasmodic pain associated with lead poisoning resembles somewhat the paroxysm of biliary colic; but the blue line on the gums and the stippled appearance of the red blood cells soon settle the diagnosis.

CONCLUSIONS

1. The gall-bladder ranks second in importance to the appendix as an abdominal offender.

2. The usual route by which the gall-bladder becomes infected is from above, that is, either directly from the blood stream or indirectly through infected bile that undergoes stasis in its cavity.

3. The most common form of gall-bladder disease is a low-grade smoldering infection.

4. Carcinoma occurs eventually in about 5 per cent of cases in which gallstones are present.

5. The most important evidences of gall-bladder disease are furnished by the history. Particularly significant is the story of repeated attacks of colicky pain with more or less constant "dyspepsia" in the intervals.

6. A history of jaundice is very common in cases of gall-bladder disease.

7. The results of physical examination in cases of cholecystitis are exceedingly uncertain and may vary from one consultation to the next.

8. Laboratory tests have only a corroborative value. The status of the widely described Meltzer-Lyon test is still uncertain.

9. The recently devised method of cholecystography after the administration of tetra-iodophenolphthalein promises to be of great diagnostic value.

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DISEASES OF THE GALLBLADDER: PATHOLOGY*

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It has been shown by Peyton Rous that the chief function of the gallbladder is the concentration of the bile. The bile may be concentrated to 1/6 or even 1/10 of its volume. The concentration is effected by absorption of water and inorganic salts. The gallbladder also serves as a reservoir for the storage of bile.

Effects of cholecystectomy. Removal of a diseased gallbladder has practically no effect as a rule on the other bile passages, since the organ has already practically been removed by its loss of function. Removal of a normal gallbladder is frequently followed by distension of the common and hepatic bile ducts. Often, however, this does not occur. In some instances there is a tendency to dribbling of thin bile into the duodenum independently of meals. Occasionally patients complain of the discomfort caused by the passage of quantities of thin bile independent of regular defecation. Achlorhydria has been frequently described as resulting from cholecystectomy. The disturbances caused by removal of the gallbladder are, however, not serious enough to contraindicate the removal of the organ when it is diseased.

Obstruction of the common bile duct may be caused by a calculus, carcinoma of the head of the pancreas, lymph nodes enlarged from various diseases (metastatic carcinoma, tuberculosis, Hodgkin's disease). The immediate effect of obstruction of the common duct is jaundice which soon becomes very intense if the obstruction is complete and permanent. In the course of a short time the liver no longer secretes bile pigment and the bile in the bile passages becomes of a whitish color, due to the secretion of the epithelial cells lining the bile passages. The presence of "white" bile is an indication of serious functional disturbance of the liver. In the case of obstruction of the common duct associated with a normal gallbladder the bile does not become white for some time because of the concentrating power of the gallbladder, but when the gallbladder is seriously diseased or absent, the bile becomes colorless much sooner. Obstruction of the common duct does not cause the formation of stones in the absence of infection. Obstruction of one hepatic duct does not cause jaundice. Obstruction of the common duct produces a marked anatomic change in the liver.

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*Read by invitation before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

At first there is central atrophy of the hepatic lobules with the formation of small thrombi in the bile capillaries, especially in the central part of each lobule. In the course of a few weeks or months a definite increase of the portal connective tissue is observed. The portal tissues show an increased amount of connective tissue, many lymphocytes and many newly formed bile ducts. In the course of several months the liver develops the appearance of a typical Laennec's cirrhosis and the clinical picture of cirrhosis of the liver may develop (ascites, collateral circulation, hemorrhages from the stomach, etc.).

Obstruction of the cystic duct in the absence of infection causes a thick dark bile with a contracted gallbladder. It may also cause reflex spasm of the sphincter of Oddi with resulting stasis in the common bile duct and ultimately infection of the bile passages. Obstruction of an infected gallbladder results in empyema which may finally become a hydrops. Hydrops of the gallbladder is believed to result only from an empyema.

Cholesterosis of the gallbladder is a very common condition. It is found in at least 5% of postmortems in adults and is frequently seen in the gallbladders removed by surgeons. The wall of the gallbladder is thin and usually not discolored. The mucosa is studded with yellowish deposits which give it a characteristic appearance. It has been called "strawberry gallbladder" by McCarty. Microscopic examination shows the yellow spots to be deposits of cholesterol in the epithelium of the mucosa. It is probable that cholesterosis does not give rise to any clinical signs or symptoms. It is believed that it is due to an excess of cholesterol in the circulating blood. The majority of authors do not believe that it is related to cholecystitis in any intimate way. Occasionally the cholesterol deposits appear in papillomatous form and a few authors have expressed the belief that such papillomas become detached and furnish the nuelei for biliary calculi. There are commonly no evidences of inflammation of any kind in the wall of the gallbladder in this condition, so that it may safely be attributed to a metabolic disorder rather than to an infection.

Cholecystitis may occur with or without calculi. In the case of gallbladders which show convincing evidence of cholecystitis about 85% have calculi and 15% do not. If we include all gallbladders which show a little lymphocytic infiltration in their walls, then, of course, the percentage with calculi becomes much less. The organisms found in cholecystitis are, in order of frequency, bacillus coli, bacillus typhosus and pyogenic cocci. The route of infection in cholecystitis is still under discussion. The frequency of infections with B. coli suggests an ascending infection by way of the bile passages. The typhoid bacillus is known to reach the gallbladder through the liver (hepatogenous infection) and there is also satisfactory evidence that some organisms reach the gallbladder by way of the blood stream. At the present time we have no definite evidence as to the relative frequency of the ascending, hepatogenous and hematogenous pathways. Calculi in the gallbladder frequently result from infection but some stones are undoubtedly formed in the absence of infection. The presence of a stone in a non-infected gallbladder, however, favors infection, since it acts as an irritant to the mucous membrane and lowers local tissue resistance. Also the stasis of bile produced by a stone in any part of the bile passages has a tendency to favor infection, since it permits more readily the multiplication of bacteria. Cholecystitis is chiefly a disease of advanced middle life. It is very rare in children. It is two or three times as frequent in females as in males. Pregnancy is often assigned an important role in the etiology of cholecystitis and gallstones, but, when it is remembered that about 80% of women have borne children when they reach the age at which cholecystitis is most frequent, this factor becomes doubtful. On similar insecure grounds obesity is often assigned an important role.

Pathology of cholecystitis. Frank, well developed cases of cholecystitis, either acute or chronic, show very conspicuous gross changes, but mild cases of either type may show no changes that can be recognized by the unaided eye. In acute cholecystitis of severe degree there is an exudate on the surface of the gallbladder and frequently soft adhesions to the adjacent structures. The wall is discolored and increased in thickness. Microscopic examination reveals purulent exudate in various parts of the wall and in the serosa. In very mild cases of acute cholecystitis no gross changes are visible but an exudate of polymorphonuclear and large mononuclear leucocytes may be seen in the serosa.

Frank cases of chronic cholecystitis are characterized by thickening and induration of the wall of the gallbladder, often with adhesions to adjacent structures. Stones are usually present. Microscopic sections show a great increase of fibrous connective tissue, especially in the subserous layer. A variable number of leucocytes are seen. The presence of any considerable number of polymorphonuclear leucocytes means an acute exacerbation. If the cells of the exudate are chiefly small lymphocytes, the inflammation is active but of definitely chronic type. When practically all leucocytes of all kinds are absent, and only scar tissue is present, the inflammation is healed and is usually not responsible for any clinical symptoms. Adhesions to the first part of the duodenum near the pyloric sphincter may result in pyloric stenosis and lead to a diagnosis of carcinoma.

Mild cases of chronic cholecystitis may not be recognizable grossly. If the clinical indications are sufficiently strong a surgeon may be justified in removing a gallbladder that appears normal grossly. Such a gallbladder may show a small amount of perivascular lymphocytic infiltration in the subserous layers. Definite scarring of the edge of the liver around the gallbladder is an indication of chronic gallbladder disease.

A great many gallbladders are removed in which no evidence of old or recent inflammation can be found microscopically. These must be regarded as errors in diagnosis.

Cholelithiasis. It has been shown by Aschoff that pure cholesterol stones may be formed in the absence of inflammation. Such stones are single. They may lead to some disturbance when they occlude the cystic duct. Pigmented gallstones are associated with cholecystitis. Oversaturation of the bile with cholesterol plays an important role in cholelithiasis. While it is true that no gallstone can be considered harmless, a great many never produce any recognizable symptoms.

Pancreatitis is closely associated with disease of the gallbladder, although the exact route of the infection from the gallbladder to the pancreas is uncertain.

X-RAY DIAGNOSIS OF GALL-BLADDER DISEASE*

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The x-ray examination of the gall-bladder prior to the introduction of the use of the dyes was somewhat uncertain and on the whole rather unsatisfactory.

While some workers were reporting diagnostic accuracy to the extent of 90%, the average roentgenologist was apt to be satisfied with about one in three, or perhaps less, if based solely upon roentgen findings.

We are many times accused by the clinicians and those less familiar with film interpretation, of being able to see shadows and observe changes in density, which to them do not exist. This, I believe to be true and due to the fact that the roentgenologist's eye is not only better trained, but is kept more in practice and is, therefore, more accurate and efficient. However, I am inclined to the opinion that a careful history, together with the rather frequent preliminary palpation of the right upper quadrant, supplemented by the dictum of "fair, fat and forty" in a chronic dyspeptic, may sometimes in a small measure influence our final conclusions in that large per cent of cases where the shadows in the right upper corner are indefinite, inconclusive or perhaps absent. This, I believe, may account in a large measure for the difference in the per cent of accuracies in diagnosis as reported by different individuals.

It is an easy matter to make a diagnosis of gall stones if definite shadows are present but it cannot be said positively that gall stones or a pathologic gall-bladder do not exist if these changes in density are lacking. With our present day radiographic technic practically 100% of gall stones containing calcium can be shown and a large per cent of cholesterin and bile salt composition may be identified if the patient is properly prepared and a sufficient number of films of different density are obtained. The preparation of the patient is of vital importance and will be discussed later.

With the advent of the use of dyes in gall-bladder visualization, a much broader field has opened for roentgenologic diagnosis of this rather obscure organ.

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Early in 1924 Graham and Cole⁽¹⁾ introduced their method of gall-bladder visualization which was accomplished by the administration of the calcium salt of tetrabromphenophthalein, which being excreted with the bile and collected in the gall-bladder, casts its shadow on the x-ray film. However, this was soon abandoned for the sodium salt derivative, which they found less toxic, and in July, 1924, they reported the intravenous administration of the latter product in 55 cases with marked success but not altogether satisfactory, due to the fact that certain reactions were sometimes encountered and much precaution regarding the preparation of the patient and the administration of the drug was required⁽²⁾.

Whitaker and Milliken⁽³⁾ did some experimental work on dogs determining the comparative value of sodium tetrabromphenophthalein and sodium tetraiodophenophthalein with the following conclusions: The relation of the opacity of the tetrabrom to the tetraiodo salt was approximately one to two. After administering a lethal dose to dogs and radiographing their gall-bladders, it was found that gall-bladder shadows were discernible in 81% of those to which the tetroido salt had been administered, while only 19% of the tetrabrom dogs showed shadows. Since the comparative opacity was about two to one in favor of the tetraiodo salt and the toxicity of the two being about the same, they concluded the tetraiodo salt to be the one of choice since a much smaller dose would suffice and the danger of toxicity be thereby greatly lessened. This was a distinct advance but was still somewhat objectionable due to the intravenous administration.

In April, 1925, Menesse and Robinson⁽⁴⁾ reported the oral administration of the sodium tetrabrom salt in 35 cases, with no severe reactions and relatively good results; the principal objection being the inability of many of the patients to retain the dye.

In order to escape the gastric irritability and the nausea and vomiting, attempts were made to administer the dye by the duodenal tube and per rectum⁽⁵⁾ with varied success. The sodium tetraiodo salt was the dye of choice: the problem was to get it by the stomach without the usual gastric irritation, nausea and vomiting

Whitaker, Milliken and Vogt⁽⁶⁾ seemed to meet these requirements first, by the administration of the dye in the form of stearic acid coated pills. They reported satisfactory gall-bladder shadows in 93% of sixty cases. Since this time the oral administration of the sodium tetraiodophenophthalein salt in special prepared form has come into general use in roentgenology and in the hands of the rank and file is to be preferred to the intravenous administration, although it must be admitted that one can never be certain as to just how much of the dye has been absorbed as is the case with intravenous administration. It is not unusual, in fact, one frequently finds much of the dye, sometimes capsules undissolved, in the colon. When such is the case you may not be sure as to the proper evaluation of the gall-bladder shadow presented, if any. Zink⁽⁷⁾ calls attention to this, particularly in early pathological cases and no doubt rightly states that questionable findings following oral administration should be checked with the intravenous method. Our work has been confined wholly to the oral method.

Technic. Given a case for gall-bladder examination, we proceed as follows: If we are notified in advance, the patient received an enema the evening before the morning of the first examination. No cathartics are administered as they tend to load the bowel with gas. The patient reports the following morning an hour before time of examination. At this time he is given another enema, which is given slowly and retained for fifteen or twenty minutes, if possible, then followed by one cc. of pituitrin per hypo. After this is expelled, we invariably find the colon empty and free from gas, a very essential point on this examination. Three to five films of different density are taken of the gall-bladder area. This is accomplished by varying the penetration about two K. V. with each film. The patient is then instructed to eat the usual noonday meal, the evening meal to be light and fat free. He is given ten grains of the sodium tetraiodophenophthalein for each twenty-five pounds of body weight and instructed to take it in three or four doses, one every fifteen minutes beginning at 8:30 p. m. With the first and last dose, he gets twenty grains of sodium bicarbonate and drinks plenty of tepid water. He is instructed to lie down, turned to the right side during the time and for an hour following the taking of the dye. He reports the following morning without breakfast. He is instructed to avoid all odor of food as it has been proven that even this was sufficient to stimulate contraction and emptying of the gall-bladder.

A film is taken approximately twelve hours after the ingestion of the dye, and one of three points is usually noted:

(1). Gall-bladder shadow absent. If no shadow or only a faint shadow is present, subsequent examinations at two to three hour intervals are made, during which time all food is withheld. If a normal density shadow is not obtained after eighteen hours, following the ingestion of the dye, interpretation is made. First, we must ascertain either by flouroscopic examination or by film that the dye has been absorbed and is not in the colon.

(2). Gall-bladder is filled but shadow is faint.

(3). Gall-bladder is filled and of normal density.

Diagnosis of gall-bladder pathology is dependent upon three factors:

(1). Power of the liver to secrete the dye.

(2). Patency of the cystic duct.

(3). Power of the gall-bladder to concentrate its contained dye sufficiently to cast a normal shadow.

Therefore, if no shadow is obtained, it means either:

(1). Disturbance of liver function with inability to excrete the dye. This may be more or less theoretical and remains to be proven.

(2). Occlusion of the cystic duct from any cause.

(3). Failure in power of gall-bladder concentration.

(4). Failure in dye absorption or if patient has vomited profusely while taking the dye. These facts have been obtained at the beginning of the examination.

(5). Small, sclerosed, obliterated gall-bladder lumen.

If only a faint shadow is obtained and of about normal size, it may mean:

(1). Hepatic insufficiency.

(2). Insufficient bile concentration.

(3). Insufficient ingestion or absorption of the dye. If a sufficient amount of the dye has been absorbed and in the absence of clinical signs bespeaking a liver insufficiency, if only a faint shadow presents, we feel justified in changing it to a failure of concentration which is practically always the result of some mucosal inflammatory process.

When the gall-bladder fills and a fairly dense shadow is obtained, we are enabled to study the gall-bladder much the same as we study the stomach following the ingestion of the opaque meal. Its size, shape, location and contour may be noted. As we have had to revise our idea as to the location of the stomach since the advent of the x-ray, so we may expect to find the gall-bladder far afield from the tip of the 9th costal cartilage. However, we are not so much concerned about its location, nor its size, particularly, if within reasonable limits, but we are interested in knowing how it functions. Therefore, after having noted its ability to fill and concentrate the bile, we give the patient a glass of cream and the yolks of two eggs, and examine one to two hours later. The normal gall-bladder will be anywhere from 50% reduced in size to completely empty on this examination, proving the elasticity and contractility of the walls, a condition that would not exist in a pathological condition.

After the filling of the gall-bladder with the opaque dye, stones of cholesteral or bile salt formation that have been invisible on the first examination may be rescued as negative shadows on the opaque background. They, being of lesser density than the dye, show in contrast.

Change in normal contour may be noted; as hourglass contraction, dislocation of the fundus or other irregularity, which bespeak adhesions. Many times an opaque meal may be administered showing the relation of the duodenum to the gall-bladder and thereby assisting in demonstrating pericholecystic adhesions.

Our work has been confined wholly to the oral administration method and on the whole has been quite satisfactory of late, since more strict attention is being paid to the proper preparation of patients and the preliminary x-ray examination before the administration of the dye. It is quite important that the patient thoroughly understands every detail relative to the taking of the dye and the avoidance of food, even its odor, until after the second examination.

The habit of physicians' administering the dye at their convenience at any time of day and then sending the patient in for pictures is bad practice and will invite failure in most instances.

About 25% of the cases experience some gastric distress or nausea, but never serious. About 12% vomit, but rarely until most of the dye has passed out of the stomach. Seldom do we find it necessary to make a second effort with the intelligent patient, who is willing to co-operate. Diarrhea is a negligible factor.

On the whole we find cholecystography as satisfactory as gastro-intestinal roentgenography and believe it to be a great advance in the diagnosis of gall-bladder pathology.

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LIMITATIONS OF GOITER PROPHYLAXIS

Government authorities believe that there is no reason for special goiter prevention measures on the part of the state and local health departments. They do not see any necessity for universal prophylaxis such as may be attained by iodization of table salt or municipal water supplies. There is a growing opinion that the administration of iodine as a means of preventing goiter should be under the guidance of physicians and should be individualistic. In this way much good may be accomplished. (*Jour. A. M. A.*, July 9, 1927, p. 114)

THE MEDICAL TREATMENT OF GALL-BLADDER DISEASE*

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We have dealt so much with the end products of gall-bladder disease that it has become almost axiomatic to say in regard to treatment "surgery". At the outset in considering the scope of the medical treatment of gall-bladder disease medicine has nothing to offer for the removal of gall stones—these are mechanical obstructions or irritants and can only be removed by mechanical means.

Medical treatment is reserved for use in incipient gall-bladder disease and in the prophylaxis and treatment of infections and stasis which are the forerunners of inflammation and gall stone formation. Patients are in the medical category for pre-operative and post-operative treatment also.

Miller would classify medical treatment as follows:

1. For early stage disease with mild symptoms, long intervals of relief or quiescence and for patients who because of their youth and body vigor may be reasonably expected to overcome the infection, not, however, without help. We aim our treatment at the catarrhal inflammation of the gall-bladder and bile ducts and especially to conquer the reflex dyspepsia. So we must study our patients to be informed of the associated pathology and mal-function as evidenced in achylia gastrica, delayed gastric emptying, pericholecystic adhesions, constipation and colitis. Once these things are known and this indirect therapy instituted it may be all that is necessary to keep the gall-bladder disease quiet and render the patient symptomless for years.

2. The second class of conditions suited to medical treatment is among patients with complicating contra-indications for surgery for whom it has been decided after careful study that they will not be any better off even if the diseased gall-bladder is safely removed and also for those for whom the operation cannot be undertaken with any hope of the patient surviving.

3. The third type within the scope of medical technique is that pathology in patients who have had a cholecystectomy but who still suffer and who might have secured a perfect result had they been put on a smooth diet after operation for it has been shown that 26% of patients present post-operative symptoms consisting chiefly of a hyper-cholesteral-aemia or cholesteral retention which must be controlled by a diet free from fats and lipoids.

The province of the internist, besides diagnosis, is to restore function—to reestablish physiological activity approximating the normal as far as is possible. In regard to gall-bladder disease the whole cycle of pathological changes center about stasis of bile flow. The most common cause of this stasis is infection. Therefore, all that we have to offer in medicinal procedures is for the treatment of infection with a corresponding relief of stasis and its further prevention and we place treatment before prevention in this consideration because a definite pathological entity presents itself in a patient who comes to the internists attention and his first need is relief and then a prevention of a recurring pathology.

In order to get at a definite idea of stasis of bile flow we must first enumerate the mechanics with which we are dealing. There are, as it well known, several theories of gall-bladder function—first, that it functions as a *reservoir* for bile during the intervals between feedings. Its capacity is, however, less than the amount of bile secreted in a half hour but its absorptive power increases its storage capacity. A second theory is that the gall-bladder functions as an *absorbtive unit*—absorbtive chiefly for cholesterol.

This would seem to be proved by reason of its rich supply of lymphatics, by the character of its mucosa and by its movements. The third theory is the gall-bladder functions as a *secretory* organ and this is borne out by the fact that it adds mucous to the bile although the mucosa is not histologically the type found on secreting surfaces.

The liver secretes almost an ounce of bile an hour when functioning. This bile is of low specific gravity—1 to 2% solids. Bile is secreted by the liver cells under such low pressure that it resembles a simple leakage so that but a slight obstruction by catarrhal swelling of the mucous membranes of the bile passages suffices to cause jaundice. Between digestive periods the gall-bladder is concentrating bile. The sphincter of Oddi which encircles the common bile duct maintains the tension of the duct and is probably concerned in the mechanics enabling a part of the total bile to pass into the gall-bladder for concentration thereby assisting in cholesteral accumulation.

Hohlweg found that the gall-bladder could concentrate bile so that 40 cubic centimeters of bile found in the gall-bladder represented 240 to 400 cubic centimeters of bile as it comes from the liver. The evidence is conclusive that the gall-bladder never completely empties itself at one time—it appears to empty slowly and not in a manner similar to the urinary bladder.

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The bile contains fat, cholesterol, bile salts and bilirubin. Michaud shows that the fats and cholesterol are held in emulsion by the soaps and cholates which diminish surface tension. Changes in these protective colloids by an excess of albumen, fats or by bacterial toxins may cause abrupt precipitations and gall stone formation from the bile mixture of crystalloids and colloids.

Inflammation of the biliary tree markedly affects the flow of bile and promotes stasis, but antedating the infections are changes in the blood constituents with a probable relation to a disturbed hepatic function. Cholesystitis is now considered the essential and primary disease—gall stones being secondary and not found in all types. There is no danger of stone formation so long as the normal constituents of the bile are held in solution as they are by bile salts, especially the glycocholate of sodium. Our best treatment is to attend to the general health of the patient and the best preventive is the solvent action of a free flow of limpid bile in and out of the bladder.

Practically all cases, years previous to any evidence of a pathological gall-bladder or stone disease give a characteristic history of poor alimentation. It is during this stage of the disease that non-surgical methods are most efficient. Such cases, however, must not be put off with the usual dose of baking soda for it is in the majority of this class of cases that show a hypochlorhydria. The alimentary tract and hepatic functions must be studied and corrected in conjunction with the foci of infection. The life of any cell depends first upon its food supply and secondly upon the removal of its waste products. The same applies to any organ of the body including the liver and the gall-bladder. It is upon these two factors chiefly that the so-called "resistence to infection" depends. Therefore, the successful treatment of gall-bladder disease must include the factors that combat infection as preventitive measures. Abnormal alimentation and its resulting poor food supply to the organ impairs function and causes increased susceptibility to infection. The duodenal tube is a help in restoring function and also affords a means of detecting defective physiology of the alimentary canal and its secretory glands, as for example the pancreas. Naturally, if the internist is content with surgery and does not use more conservative and physiological methods, stones, gangrene and adhesions years later may result.

Infection in gall-bladder disease may come by way of the portal vein and possibly by way of the general circulation, or by the ascending route from the duodenum via the common duct in which the sequence of events is infection from the gums, teeth, nasal sinuses or the respiratory tract, the infective material is swallowed, sets up a disease in the stomach and duodenum and thus ascends to the common bile duct. Our duty is to maintain general bodily activity especially to prevent bile stasis and done by proper exercise, correction of sedentary habits, avoidance of obesity and by proper elimination and the prevention of bowel infection by the management of mucous colitis, constipation and diarrhoea.

Alvarez has shown that most of the symptoms of intestinal diseases are due to disturbances in mechanical functions of the gut and that the symptoms of vomiting, nausea, regurgitation, heart burn, belching, coating of tongue with foul breath a feeling of fullness after one begins to eat are all induced by various degrees of reverse perstalsis and it is, therefore, important to give the patient a smooth diet, cellulose-poor without salads, coarse vegetables or fruits. Some people are helped by taking Carlsbad salts in hot water before breakfast. Belching and heartburn are often helped by the giving of sodium bicarbonate and magnesia. Hoffman's anodyne often brings relief during gall-bladder attacks at night and during paroxysms of pain, paregoric, morphine and papaverin have to be used. The physician should remind the patients who are losing weight that they will probably have trouble whether they eat or not so they had better eat and keep their strength.

Hexamethylenamin at one time was thought to be a biliary antiseptic but what Crowe found in the gall-bladder was hexamin and not formalin. The urine is the only fluid in the body capable of bringing about the reaction. Mercurochrome was recently heralded as a biliary antiseptic; given intravenously it causes severe reactions, chills and high fever and is not free from danger. In some autopsies, representing an average, intense nephritis and intestinal lesions characteristic of mercury poisoning was found. An acid medium is needed for mercurial activity and apparently in the alkaline bile it has only a moderate germicidal power. If time shows it to be a valuable biliary antiseptic the danger attendent upon its use would prevent its general adoption.

The commonest condition favoring a bacterial invasion of the intestine is an unhealthy state of the intestinal walls from chronic constipation. For this a bi-weekly mercurial laxative is given and for routine treatment a prescription consisting of phosphate of soda 2 ounces, salicylate of soda 3 drams, and benzoinate of lithia 1 dram, which is divided into 12 powders and one given in a glass of water sipped slowly before meals.

The only drug capable of increasing the flow of bile is ox bile. Stimulation of bile flow can be done with nitrogenous foods which act better than fats or carbohydrates and to assist in more frequent flows which occurs after meals, five meals instead of three are recommended, and also the elimination of fats is a preventative measure in getting a low cholesterin diet. A watery flow of bile is stimulated by an ounce of olive oil in a cup of hot milk at night which works by absorption in the blood, passes out by the different mucous membranes excreting an abundant flow of watery fluid. For cholecystitis give this for 10 consecutive nights, wait a week and then repeat. Aperient waters as ordinarily taken by mouth, do not stimulate a relaxation of the sphincter of Oddi on account of their change by the acid of the stomach; the most rational method of getting such a reaction is by instillation direct by the Lyon-Meltzer method—the duodenal tube.

And now we come to the most recent technique in the armamentarium of the internist in the treatment of gall-bladder disease—the Lyon-Meltzer non-surgical drainage of the gall-bladder. Its efficiency is a mooted question. The Lyon drainage with a magnesium sulphate passed into the upper small gut without contact with the gastric secretions is found to cause a temporary relaxation of the sphincter of Oddi encircling the common duct outlet. It is probable that but a small amount of the total bile enters the gall-bladder but the bile in the hepatic ducts secreted by the liver. With the very limited efficiency of relief of gall-bladder stasis by diet and the oral administration of drugs, the Lyon method would seem to promise us our best method for the relief of stasis in the biliary tree, and is certainly of benefit in simple catarrhal conditions mainly when they are in the ducts.

Lyon himself states that "cholelithiasis remains entirely beyond the scope of this treatment also when the gall-bladder and bile ducts are disturbed greatly from disease. Anything that will prevent these severe and advanced cases demanding major surgery is welcome and herein lies the hope of the non-surgical duodeno-biliary drainage". Friedenwald and Morrison state that "there is no question that non-surgical drainage furnishes us a means of definite relief of certain biliary affections for which hitherto radical measures were required. It is an extremely valuable aid in the treatment of catarrhal jaundice, biliary stasis and gall-bladder infections and in relieving infections which may still remain after gall-bladder operations.

Smithies, Karshner and Oleson lay down a lengthy series of conditions in the treatment of which duodenal biliary drainage has been found useful.

1. Acute cholecystitis or hepatitis in association with acute infectious ailments as pneumonia or arising as a limited biliary tract disease.

2. Hepatitis with faulty duct action from ptomaine, lead or phosphorus poisoning and acute yellow atrophy.

3. Biliary stasis.

4. Attacks of biliousness in conjunction with migraine.

5. In rheumatoid infections after the foci of infection have been removed but the biliary tract involvement and the rheumatoid condition continues.

6. In instances of intestinal stasis with biliary and liver types of dyspepsia and attacks of mucous colitis.

7. When after operations on the biliary organs derangement of function continues and further surgery is not possible.

8. In cases of infection of the biliary organs without gross mechanical defects, stones or new formations.

Simon found the injection of magnesium sulphate solution into the duodenum brings prompt relief in a number of cases—the pain, local symptoms and toxic features disappearing. Many cases of jaundice, and cholecystitis may be cured and never become surgical subjects.

Synott adopts Lyon's technique to establish early diagnosis and treatment of biliary stasis because stasis with its concentrated bile and precipitation of its crystalline chemical ingredients, plus catarrh, plus infection, means gall stones. His treatment is summerized as follows:

1. While the metal tip is still in the stomach the contents of the viscus are withdrawn for examination.

2. The tip is then allowed to pass into the duodenum and the magnesium sulphate solution is instilled—the three types of bile are then secured.

3. The duodenum and stomach are lavaged with some of the disinfectants recommended for treatment such as potassium permanganate.

4. The duodenum is then slowly lavaged with 250 cubic centimeters of Ringer's solution to which has been added sodium sulphate which causes a thorough and painless movement of the bowels.

5. This treatment is employed about once a week and then as the patient improves, less frequently.

The non-surgical drainage promises us much in treatment of gall-bladder disease; let neither the champions nor the conscientious objectors to this method be too autocratic in their opinions.

The *diet* in gall-bladder disease presents a difficult problem. In general we aim to employ a hypo-cholester-emic diet in a hyper-cholesteremic case; we try to empty the gall-bladder by food stimulation, reduce the overweight individual, keep a balance in the normal individual and make new tissue in poorly developed and undernourished patients.

Here is a problem in which two opposites are presented: A. Hypocholesteremic diets are low in *fats* which make lipoids and lipoids make cholesterin. B. Yet fat foods are the best stimulant for emptying the gall-bladder.

So, if we must have a hypocholestermic diet, we must use other foods for emptying such as the peptone producers—meats. Such foods as starches, sugars and foodstuffs rich in inorganic salts do not stimulate biliary flow.

Bassler's dietetic treatment for chronic gall-bladder and duct disease is aimed at three classes of patients: 1. For normal and thin subjects. 2. Food stimulating for obese subjects. 3. Diets for simple weight reduction. In cholecystitis he tests for the content of cholesterin. Then he alternates a *fat fast day* and a *fat feast day*, in the former the patient avoids eggs, cream, butter, meats and fish, in the latter he uses these foods. The general suggestions for all days is to "drink a glass of vichy or kalak before breakfast and at noon, do not drink anything until the end of meals but take 8 glasses of fluids during the day. The best laxatives are Carlsbad salts or sodium phosphate. Meals should be frequent and in small amounts. No hard stuffs such as potatoes, salad or cheese, no black coffee, cold foods or drinks or bread. Vegetables should be cooked soft and purees used in place of soups.

In a general consideration of the medical treatment of gall-bladder disease remember that practically every gall stone case had for years a chronic disease in the gall-bladder and ducts before the stones were formed. That is the reason who we see mostly the cases without stones between 35 and 45 and the stone cases between 45 and 60. No doubt better work in the younger ones will mean fewer operations in the older. There is an increase in digestive diseases due to more rapid changes in our food and methods of preparation and our habits of living than the slower working evolutionary processes can yet become adjusted to medical treatment functions best in early gall-bladder disease, subservient to early diagnosis. There are yet problems to be worked out, especially in the relation of deranged hepatic function to gall stones and other diseases of the gall-bladder and these will be available when the results of the newer diagnostic methods, medical and surgical treatment and necropsy investigations are assembled. Claude Bernard's dictum that each organ is endowed with the function of creating internal secretions may yet be proven in relation to the liver, with a possible relationship to gall-bladder pathology and more specific therapy.

DIET IN THE TREATMENT OF PERNICIOUS ANEMIA

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Pernicious anemia is a primary or essential anemia and its etiology is still unknown. All cases should be carefully examined for an etiological factor and if found the anemia can no longer be classed as primary. Pernicious types of anemia are found in some cases of lues, malignancy, and in certain cases of animal parasites that inhabit the intestines, blood, arteries, veins, or cellular tissue, namely uncinaria, tape worm (Bothriocephatus latus), filiaria, plasmodium malaria, schistosomum, etc. The etiological relationship of certain cases of sprue to pernicious anemia and likewise the absorption of the toxins of bacillus Welchii have aroused considerable interest of late but they in all probability are merely pernicious types of anemia similar to those named above.

The absence of free hydrochloric acid, the atrophy of the gastric and intestinal mucosa have constantly been discussed both as the cause and the result of pernicious anemia. Recently Faber of Copenhagen has again revived the intestinal origin of this disease but no experimental work has definitely established its relationship. At a recent meeting Ivy of Chicago stated that a secondary anemia was found in dogs on whom he did extensive gastric resections. These experiments were to produce an achlorhydria and not primarily to produce an anemia.

Many human stomachs have been extensively resected but in no instance has any one reported a pernicious type of anemia as the result of the same. Likewise there are numerous cases of achlorhydria which have very little if any anemia. Pernicious anemia is probably only a symptom complex of a metabolic disturbance due to various etiological factors which are able to produce an atrophy of the gastric and intestinal mucosa.

No known cure has as yet been discovered for this ever increasing scourge but many forms of treatment have helped in producing favorable remissions and hence have been heralded as cures. Any type of disease that normally has remissions and exacerbations will constantly confuse us and make it difficult to regard any form of treatment as a cure until it has stood the acid test of time.

Cabot reports that eighty per cent of all cases of pernicious anemia have a favorable remission at some time during their course. Splenectomy was especially advocated by Eppinger of Vienna and was given considerable attention for awhile, however, it was soon abandoned because it proved to be of no more value than less serious forms of treatment. Mercurochrome, gentian violet, acriviolet, and other dyes are being tried and may prove of some value but further work is needed to find just what beneficial role they may play in the treatment of this disease.

Transfusions both direct and indirect methods have produced temporary remissions but the effect is not lasting and the remissions are usually of short duration. I tried a method of transfusion which I chose to call the interrupted method, in which I used injections of 20 to 50 cc. of whole blood every day or every other day from multiple donors in the hope that some donor might stimulate the bone marrow more readily than others. I felt that it was not blood volume that was needed as much as stimulation and for the time the method looked promising, but as time went on it proved to be of very little more value than other methods of transfusion. The blood of a case of polycythemia was transfused into a pernicious anemia also without result. Transfusions are largely of value in secondary anemias from hemorrhage or in temporarily tiding a patient over a crisis until his or her blood regenerating system may resume its own active duty.

Various agents such as rest, colon irrigations, iron and arsenic in various forms, large doses of hydrochloric acid, lactic acid, germanium dioxide, glycerine and other drugs too numerous to mention have been used with success but no form of treatment has offered the promising results that are now being produced by the dietetic treatment recommended by Murphy and Minot.

The dietetic treatment of pernicious anemia is not particularly new but it has never been used in an efficient way until such men as McCallum, Whipple, Robscheit-Robbins and their associates, and Howard and Gibson paved the way. Murphy and Minot have standardized a high nuclear diet low in fat that has been the greatest advance in the treatment of pernicious anemia that we have had in years and it is indeed a pleasure to see the rapid improvement that takes place in such cases that carefully follow this diet.

Murphy and Minot reported a large series of cases that improved rapidly under this form of treatment and many other men are daily reporting similar good results. The diet recommended by them is as follows:

1. From 120 to 240 gm. and even sometimes more of cooked calf or beef liver. An equal quantity of lamb's kidneys was substituted occasionally.
2. 120 gm. or more of beef or mutton muscle meat.
3. Not less than 300 gm. of vegetables containing from 1 to 10 per cent of carbohydrate, especially lettuce and spinach.
4. From 250 to 500 gm. of fruit, especially peaches, apricots, strawberries, pineapple, oranges and grapefruit.
5. About 40 gm. of fat derived from butter and cream, allowed in order to make the food attractive. However, animal fats and oils were excluded so far as possible.
6. If desired, an egg and 240 gm. of milk.
7. In addition to the above mentioned foods, breads, especially dry and crusty, potato and cereals, in order to allow a total intake of between 2000 and 3000 calories composed usually of about 340 gm. of carbohydrate, 135 gm. of protein and not more than 70 gm. of fat. Grossly sweet foods were not given, but sugar was allowed very sparingly.

Low fat intake was recommended in this diet because it has been shown that certain lipoid substances could enhance hemolysis and likewise an excess of fat in any diet favors intestinal putrefaction, a condition often found in pernicious anemia. This has since been more or less disproven for some cases do well in spite of increasing the fats. They also limit the starches and sugar because they also increase intestinal fermentation.

The liver seems to be the main factor that is of special value in this diet and it must be eaten daily in prescribed amounts over long periods of time to prove of value. Calf or beef liver is the best form of liver to use and it must be prepared in various ways so as not to have the patient tire of it. If the patients are fully impressed at the outset that they must eat liver each day and that they must not ever allow themselves to tire of it, they are at once impressed with its importance and I have rarely had any trouble in having them take it. Murphy and Minot occasionally substitute lambs kidneys for liver and in some cases it does slightly help to change the variety of the diet. Chicken livers, brains, sweet breads, are also of value but as stated above we have found calf or beef liver to be the most essential and best factor in raising the blood count.

The high iron content in liver, the leafy vegetables, certain fruits, especially strawberries, oranges, grapefruit, peaches, etc., may be the factor that produces the beneficial results, however, this hardly seems sufficient to explain their rapid progress. Liver may contain some activating substance or hormone that stimulates the bone marrow to more active production of red cells, however, further research is needed before its real beneficial results can be explained. High vitamine and other modifications of the Murphy-Minot diet are recommended but the end results are all the same.

I wish to report several cases all of which have shown a rapid remission. The clinical improvement in these cases is excellent and is even greater than the blood count occasionally indicates. The cord degeneration that occurs in these cases cannot be greatly changed but it is surprising what clinical improvement occurs and how much better they get along. The psychic factor in any new medical regime is a great help and some men will undoubtedly claim that its effect has much to do with the clinical improvement but this cannot be true because the results reported in all clinics are similar in most details.

It is impossible at this period to state how lasting the remissions will be but from the results reported by all men it seems to be the most promising form of treatment we have ever had.

CASE I

J. N. Age 45. Divorced. Steward. Admitted December 1, 1926. Birthplace, Norway.

Complaints: Weakness, shortness of breath, swelling of ankles, unsteady gait.

Family History: Negative.

Past History: Had varicose veins removed twenty years ago. Had rheumatism, gonorrhea, denies venereal sore. 18 months ago positive spinal puncture reported. 20 weeks of anti-luetic treatment. No treatment for long period previous to admittance to hospital.

Present Illness: Patient states that during past few years he has been growing weaker and that his gait is gradually getting worse so that he has had to abandon his occupation. His gait is unsteady, he tires easily and is quite short of breath, his feet swell. His stomach has bothered at intervals but no great discomfort as to time of meal or variety of food. He is moderately constipated. He has no frequency, no pain with micturition, no incontinence, etc. Respiratory symptoms negative. He complains of numbness in his hands and feet and is unable to walk without assistance of two canse.

Examination: Patient male, weight 150 lbs. Pallor marked, with lemon yellow tint to sclera. Panniculus well preserved. Eyes—pupils react well to light and accommodation. Visual fields with hand test shows no contraction. Fundus negative. Hypertrophic rhinitis, catarrhal otitis media (old). Tonsils classed as one plus. Chest and lungs negative. Heart soft systolic murmur at apex, otherwise negative. Compensation good, pressure 115-52. Abdomen—negative except palpable liver. Old varicose operation scars on inner aspect of left thigh and leg. Neurological findings—12-16-26—shows all signs of combined degeneration of the cord.

Laboratory: Repeated serum Wassermanns—negative. Spinal fluid negative. Urine—negative. Stomach analysis: Free hydrochloric acid 0, total acidity 1, otherwise negative.

Blood count: 12-2-1926. Hemoglobin 30%, Reds 1,430,000. Index plus 1, leucocytes 7,100, polyneuclears 71%, large lymphocytes 5%, small lymphocytes 24%. No shower of nucleated reds. Anisocytosis, 2 plus, poikilocytosis 2 plus, polychromasia 2 plus.

Diagnosis: Pernicious anemia. Questionable lues.

Comment: The history of a reported positive spinal fluid and what etiological factor it played in this case is questionable.

Treatment: No medication, no anti-luetic treatment, no iron or arsenic, just dilute hydrochloric acid 25 min. t. i. d. p. c. Murphy-Minot diet started 12-5-1926.

Serial blood counts:

Date	12-2-26	12-4-26	12-16-26	1-9-27	1-20-27
Hemoglobin	30%	30%	40%	55%	60%
Reds	1.430.000	1,016,000	1,300,000	2,265,000	3,220,000
Index	plus 1	plus 1	plus 1	plus 1	minus 1
Whites	7,100				
Polys	71%				
Large Lymph.	5%				
Small Lymph.	24%				
Nucleated reds	present				
Anisocytosis	present				
Poikilocytosis	present				
Polychromasia	present				

Date	2-4-27	2-10-27	3-8-27	3-9-27	4-25-27
Hemoglobin	70%	76%	80%	90%	87%
Reds	4,330,000	4,848,000	4,410,000	5,600,000	4,550,000
Index	minus 1	minus 1	plus 1	minus 1	minus 1
Whites			8,650	5,000	10,000
Polys			63%	64%	66%
Large Lymph			15%	15%	15%
Small Lymph			22%	20%	21%

Comments: This patient improved excellently as shown by above blood counts. He had no anti-luetic treatment so that the improvement was wholly due to the diet.

Case II

Mr. F. R. Q. Age 41. Railroad man. Referred by Dr. L. Married. One child, living and well.

Complaints: Weakness, anemia, vomiting. I will omit history and physical findings to conserve space.

This was a typical case of pernicious anemia that had two transfusions, November, 1926, with no improvement. He was seen at home February 1, 1927, and was in bed most of the time with sore tongue, etc. He was started on a Murphy-Minot diet February 4, 1927.

Serial blood counts:

Date	10-11-26	4-5-27	5-24-27	6-4-27	6-22-27
Reds	1,568,000	3,616,000	4,032,000	4,160,000	4,256,000
Whites	6,400	7,200	12,000	7,400	6,600
Hemoglobin	40%	60%	68%	68%	70%
Index	plus 1	minus 1	minus 1	minus 1	minus 1
Polyneuclears	72%	64%	60%	67%	60%
Large lymph.	4%	13%	14%	3%	12%
*Small lymph.	24%	23%	26%	30%	28%
Nucleated Reds	Few	None			
Anisocytosis	Present	Present			
Poikocytosis	Present	Present			
Bas. Deg.	Present	Present			

*Counts were made in different laboratories.

This patient improved rapidly and is now working, attending his daily occupation.

CASE III

Mrs. A. W. B. Age 52. Married. Housewife. Referred by Dr. S.

Complaint: Weakness, numbness of hands. Cannot dress herself easily. Hands go to sleep. Pallor.

This was a typical case of pernicious anemia, with an early combined cord degeneration. She had no free hydrochloric acid and a sore tongue at times. Her teeth were extracted some months ago and she had been on injections of cacodylate of soda, also iron prior to the time I saw her. She entered the hospital, February 6th, 1927, and was put on the Murphy-Minot diet. The patient left the hospital, March 10th, 1927, and has been under observation since that time.

Date	2-5-27	2-9-27	3-2-27	3-8-27	5-5-27	5-17-27
Reds	2.176.000	2.738.000	3.827.000	3.827.000	3.498.000	4.096.000
Whites	3.000	4.000	4.800	6.000	6.400	5.200
Homoglobin	55%	60%	70%	70%	70%	75%
Index	Plus 1	Plus 1	Plus 1	Minus 1	Minus 1	Minus 1
Polyneuclears	54%	70%	48%	52%	64%	70%
Large Lymph.	4%	2%	6%	2%	16%	10%
Small Lymph.	42%	28%	36%	46%	20%	20%
Anisocytosis	Present	Present	Present	Less	Less	Less
Poikilocytosis	Present	Present	Present	Less	Less	Less
Polychromasia	Present	Present	Present	Less	Less	Less

Comment: This patient improved greatly. The numbness of her hands lessened and she could dress herself more easily.

CASE IV

Mrs. B. Age 48. Married. Housewife. Ref. by Dr. M.

Complaint: Weakness, pallor, anorexia, swelling feet.

This was a case of pernicious anemia, although index was minus 1. She had no free HCl, had a sore tongue, etc. The blood counts were as follows:

Date	5-19-27	5-23-27	5-31-27	6-4-27	6-10-27	6-14-27
Reds	2.400.000	2.800.000	3.000.000	3.200.000	3.400.000	3.900.000
Whites	5.000	5.000	6.000	6.800	7.400	8.200
Hemoglobin	45%	45%	52%	58%	62%	64%
Index	minus 1	minus 1	minus 1	minus 1	minus 1	minus 1
Polyneuclears	60%	56%	62%	70%	54%	64%
Large Lympho.	6%	6%	8%	10%	16%	8%
Small Lympho.	34%	38%	30%	20%	30%	28%
Anisocytosis	Present	Present	Present	Present	Present	Present
Poikilocytosis	Present	Present	Present	Present	Present	Present
Polychromasia	Present	Present	Present	Present	Present	Present

Murphy-Minot diet started 5-20-27.

This patient left hospital 6-15-27 very much improved.

CASE V

Mrs. McA. Age 48. Married. Housewife.

Complaints: Excessive flow, weakness.

This patient was a case of menorrhagia due to small fibroids. Her menopause was brought on by use of radium. This is a case of a secondary anemia which was helped by the Murphy-Minot diet, but the main form of treatment was radium, iron and arsenic. The blood counts are as follows:

Date	11-17-26	2-7-27	4-22-27	6-17-27
Reds	2.784.000	2.816.000	3.872.000	4.000.000
Whites	6.000	4.800	8.600	5.600
Hemoglobin	28%	46%	55%	59%
Index	Minus 1	Minus 1	Minus 1	Minus 1
Polyneuclears	71%	68%	60%	64%
Large Lymph.	8%	14%	28%	14%
Small Lymph.	21%	18%	12%	22%

Radium used 11-20-26.

Patient home 11-28-26.

Diet started 1-1-27.

Other cases are under observation but the results are similar to those reported. Some cases improve more rapidly than others, due to the fact that they tolerate the diet better.

Secondary anemias improve on this diet but not as rapidly or to the same extent as cases of pernicious anemia.

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SOME TYPES OF MENINGITIS[*]

CLINICOPATHOLOGICAL PRESENTATION OF SIX CASES

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During the past five years, in more than 35,000 admissions to St. Joseph's Hospital, there have been only twenty-two primary diagnoses of meningitis. The rarity of this condition leads me to the presentation of material from some of these patients who have come to autopsy. I have chosen from the group patients exemplifying pneumococcic, meningococcic, staphylococcic, tuberculous and syphilitic infections of the meninges.

CASE 1

ACUTE MENINGOCOCCIC MENINGITIS

E. W. Age two months. Admitted February 2, 1927, on the service of Dr. J. M. Shramek. Died February 5, 1927.

Present Illness: Yesterday the baby, which has been well since birth, began to grunt and flex all joints, crying at intervals and moaning quietly between times. Unable to sleep. Any sudden noise caused it to twitch or have a general spasm. Cries when picked up and has not nursed since onset.

Family History: Two other children in the family have died within the past two weeks. One of these was autopsied because poisoning was suspected, and the family says no cause for death was found. They refused to allow an autopsy on the second child, but spinal puncture revealed a turbid fluid in which no organisms were found by direct smears or culture.

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[*] Presented before the Omaha-Douglas County Medical Society, April 12, 1927.

Physical Examination: Rigid abdomen. Rigid, retracted neck. General hypersensitiveness. Both upper and lower extremities rigid and flexed. Kernig's sign present.

Laboratory: On admission the haemoglobin was 95%, the leucocytes 10,450 (polys 65, small lymphocytes 30, and large lymphocytes 5%). Spinal puncture obtained 2 cc. of turbid fluid, in which globulin was positive, and the cell count 2330 (polys 82, and lymphocytes 18%). Direct smears of the fluid revealed pus cells and gram negative intracellular diplococci morphologically meningococci.

Course: In spite of treatment intraspinally with antimeningococci serum, the baby died in forty-eight hours.

Autopsy: Acute purulent meningitis; passive congestion of the lower lobe of each lung; uric acid infarcts of kidneys; hemorrhage into medullary portion of each adrenal.

The brain of this patient exhibits the picture of severe purulent meningitis. The entire brain—vertex, base, cerebellum—is covered with firm, light yellow fibrinopurulent exudate. The exudate is especially thick in the interpeduncular space, and over the vertex of the brain, where there is a thick yellow layer on each side. In a majority of the cases, the exudate is most marked at the base of the brain and over the posterior surface of the cord. The lateral ventricles contained some turbid fluid when first examined.

Microscopically the exudate is purulent, with many large polyhedral cells mingled with the polymorphonuclears. In addition there is acute inflammatory involvement of the walls of some arteries, with the presence of some polymorphonuclears in the muscular coat and even down to the intima. The intima of other arteries is thickened.

This patient is interesting from a public health standpoint. The first child in the family apparently died before the meningitis had reached the frankly fibrinopurulent stage, and at autopsy the parents were told that nothing was found to account for the death. The second child of the family died of a frankly purulent meningitis. In the fluid from the spinal puncture made at St. Joseph's Hospital no organisms were found; this fact would favor a meningococcic infection, since the other possible etiological agents are usually easily demonstrated. Autopsy was refused.

The occurrence of the infection in the third child bears out the known facts concerning its transmission in that: (1) It is almost always seen under crowded conditions (these people lived in crowded quarters and under poor hygienic conditions). (2) Children are more susceptible. (3) This apparently was a sharply localized outbreak, and only in such types do we see more than one or two cases in a single home. (4) Another child in the neighborhood is said to have had a similar condition, and these children had come in contact with that child. As far as my knowledge goes, a carrier for the small epidemic was not demonstrated.

From the distribution of the lesions in the meninges, it would appear that the infection was carried there through the blood stream rather than upward from the lymphatics of the nasopharynx.

The other microscopic changes simply confirmed the gross findings.

CASE 2

PNEUMOCOCCIC MENINGITIS

Mr. E. M. Age about 35, admitted January 4, 1927, to St. Joseph's Hospital on the service of Dr. J. W. Duncan. Died the same day.

Present Illness: Brought in comatose by police. Cyanotic. Talking incessantly and waving hands about. At times reaches toward groin. Odor of alcohol on breath.

Past History: Unobtainable.

Physical Examination: Pupils react slowly to light and accommodation. Cardiac apex outside nipple line in 5th intercostal space, and beat heaving in character. Large soft mass in left scrotum. Reflexes sluggish.

Autopsy: Acute suppurative leptomeningitis; passive congestion, lower lobe, each lung; fatty changes of the liver; large hydrocele, right. Smears of the exudate revealed gram postive lanceolate diplococci. The body had been embalmed, so cultures were useless.

This brain presents a diffuse purulent inflammation most marked over the vertex of the brain, where the sulci are filled with purulent exudate.

Microscopically in sections from the cortical surface there is diffuse acute purulent infiltration of the leptomeninges, and in one place extension into the underlying brain tissue.

This type of involvement is scarcely distinguishable grossly from that due to the streptococcus, the influenza bacillus, or that of typhoid, or even the gonococcus. In this man the involvement was apparently primary, as no other pneumococcic involvement was demonstrated.

This patient illustrates the fallacy of diagnosing acute alcoholism and confining a man to jail simply because someone smells alcohol on the breath. This man was brought into the hospital by the police, there was an alcoholic odor to his breath, and yet he had pneumococcic meningitis.

CASE 3

STAPHYLOCOCCIC MENINGITIS FOLLOWING CHRONIC MASTOIDITIS

Miss M. R. Age 58. Admitted March 8, 1927, on the service of Dr. J. W. Duncan. Died March 18, 1927.

Clinical History: She began vomiting the night before admission. Has had attacks of pain in right upper abdominal quadrant for several years; these pains have radiated to the back and right shoulder. She was in this hospital from January 23 to 30, 1927, because of an abscess over the right mastoid. There was no history of middle ear disease, and she stated that she first noticed soreness of the skin behind the ear three weeks before. The abscess was drained and she was discharged as cured.

Physical Examination: No abdominal findings. Tenderness over right mastoid.

Laboratory: Urine contained a few pus cells. The leucocytes of the blood were 12,450, with 82% polymorphonuclears.

Course: On March 13, 1927, she became involuntary and very restless. Her right ear drum was opened by Dr. B. M. Kully, but no pus was obtained. She continued to be very restless and developed signs of meningitis. The spinal fluid March 16, 1927, was turbid, contained 7210 cells, 98% of which were polymorphonuclears, and cultures on blood agar plates produced staphylococci. She died on March 18, 1927.

Autopsy: There was found an acute fibrinopurulent meningitis, due to extension of chronic suppurative mastoiditis and otitis media, right, with extradural abscess around the jugular bulb. There was a chronic suppurative process in the right mastoid and middle ear, which had extended through the tip of the mastoid to the dura, and to the brain. Cultures of the spinal fluid revealed a staphylococcus, which produced yellow pigment very slowly.

This brain presents a picture differing from the others shown, in that there is an acute fibrinopurulent exudate rather limited to the base of the brain and the surface of the cerebellum. It is the finding to be expected when an infection extends through a mastoid tip into the middle fossa.

Microscopically in sections taken from the cerebellum there is a thick layer of fibrinopurulent exudate in the leptomeninges.

CASES 4 AND 5
TUBERCULOUS MENINGITIS

T. I. Male. Age 12. Admitted February 12, 1927, on the service of Dr. H. J. Jenkins. Died February 17, 1927.

Chief Complaint: Headache for three weeks.

Present Illness: Headache in center of forehead and over eyes for three weeks. Has lost weight. Mother thinks he has had fever.

Past History: Was in the hospital from January 28 to 30, 1927, with a similar complaint, and pain in right ear following an acute cold. Was discharged after medical treatment.

Physical Examination: Stupor, opisthotonus, rigid neck, positive Kernig, and emaciation. Abdomen distended and tympanitic.

Laboratory: Urine acid, straw color, sp. gr. 1022, and no albumin or sugar. The spinal fluid obtained before admission, formed a web on standing. He died five days after admission.

Autopsy: Acute tuberculous meningitis; acute bronchopneumonia of lower lobe of each lung; caseous tuberculosis of peribronchial lymph nodes; gaseous distension of large bowel; general emaciation.

This brain gives the picture of the typical basilar type of meningitis seen in tuberulosis. Over the pons, medulla, posterior and under portions of the temporal lobes, about the optic chiasm, and up along the Sylvian fissures, is a fibrinous exudate. There are a few scattered tubercles in the leptomeninges along the Sylvian fissures. The cranial nerves at the base are caught in this exudate. On section there is gray gelatinous exudate on the floor of the anterior horn of each lateral ventricle.

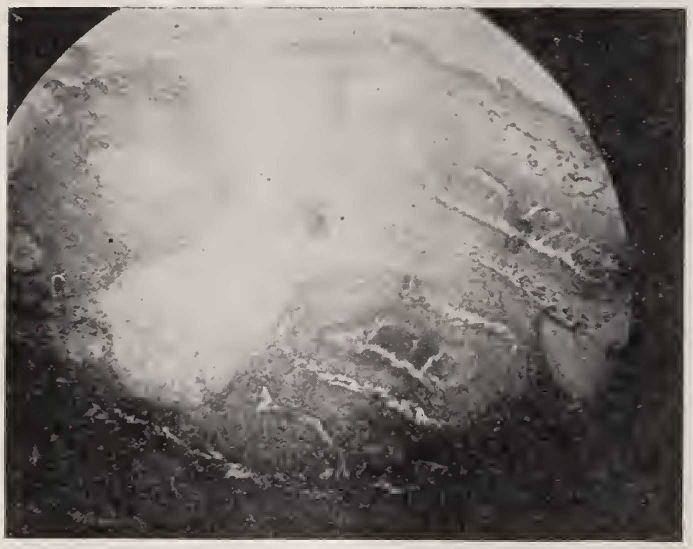

Figure 1. Portion of meninges from Case 5, showing tuberculous involvement of vessel walls.

Microscopically in the slides from the right parietal region, the left side of the pons, and the upper cord, there are dense collections of large and small mononuclears, with areas of caseation. These collections extend down into the depths of the sulci, and in the immediately adjacent brain tissue there are moderate numbers of mononuclears. The formation of frank miliary tubercles is not a prominent feature, and the reaction is more diffuse. The nerves running alongside the pons are involved.

The slides of the peribronchial lymph nodes reveal a marked caseous tuberculosis, evidently the focus for his tuberculous involvement. The bronchopneumonia was not tuberculous.

The boy illustrates a common termination of tuberculosis; the organisms apparently came from the focus in the peribronchial lymph nodes. In children this site of the focus is most common, whereas in adults it is said to be most common in the lungs or genito-urinary tract.

To exemplify the last statement, I am presenting briefly another brain, about the base of which there is a tuberculous meningitis. This patient, a Mexican, aged 28, was brought into St. Joseph's Hospital, March 3, 1927, on the service of Dr. F. J. Munk. He was moribund on admission and died the next day.

This brain presents a similar picture, but there was bilateral extensive pulmonary ulcerative apical tuberculosis, and extensive caseous tuberculosis of the prostate gland. This prostate gland I shall place on the tray with the brain

Microscopically slides from the pons reveal marked tuberculous involvement, especially in the walls of the veins.

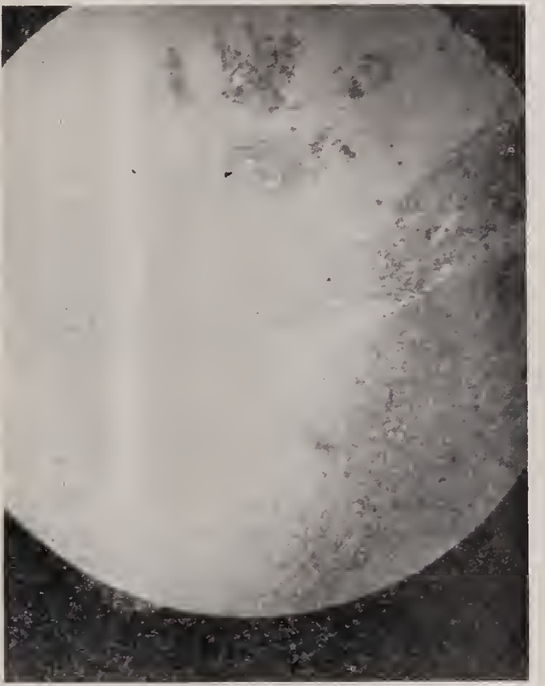

Figure 2. Portion of meninges from Case 6, showing diffuse infiltration and involvement of vessel walls.

CASE 6
SYPHILITIC MENINGITIS

Mr. O. H. Age 50. Admitted to the County Hospital, March 3, 1926.

Clinical History: Brought in by police and was having repeated convulsions on admission.

Past History: Has had syphilis for thirty years. A characteristic history of tabes was obtained from a physician who had seen him previously.

Physical Examination: Repeated right sided twitchings. Pupils dilated and do not react to light. Body rigid, muscles twitching, frothing from mouth. Coarse rales throughout chest and some dulness at left base posteriorly. Spastic right arm and leg. Exaggerated right arm and leg reflexes. Suggestion of Babinski on left.

Spinal Puncture: Pressure 22 mm. Hg.; cells 180 mononuclears. Globulin increased. Wassermann three plus. Died on March 14, 1926.

Autopsy: Only important findings were: (1) Bronchopneumonia. (2) Chronic meningitis with diffuse thickening of the meninges over the entire cerebrum and cerebellum, especially marked over the frontal and parietal lobes, and in the fissure of Rolando. The pia arachnoid in these regions is milky white. A similar thickening is present in the interpedunclear space and over the base of the cerebellum. There is moderate cortical atrophy of the extreme frontal poles. The pons is atrophied; on cross section its cross striations are prominent and all structures atrophied. The cerebral peduncles are also atrophic. There are many plaques in the blood vessels over the base of the brain. On section the lateral ventricles are moderately dilated. The thickened leptomeninges can be lifted from the cortical surface, and although gray to yellow, no fibrin can be scraped away. There are no adhesions to the dura.

Such a brain is an unusual finding. The usual syphilitic meningitis is more focal. To be identified histologically, it must be gummatous. This type is very diffuse, but apparently due to syphilis. Sometimes such a diffuse thickening is seen extending over the vertex or even the whole cerebral surface, involving both leptomeninges and dura, and attaching these to the skull. When gummatous meningitis involves the leptomeninges alone, it is usually basilar, causing the well known symptoms of basilar meningitis.

Microscopically in the leptomeninges there is dense perivascular infiltration with small and large mononuclear cells, but no gummatous formation. The changes are not limited to the meninges, but extend down into the substance of the frontal lobe and pons, so that the condition is truly a meningoencephalitis. The cranial nerves passing over the pons are also invaded by wandering mononuclear cells.

In the six cases presented there were staphylococcic, meningococcic and pneumococcic meningitides of the pyogenic group. The staphylococcic picture followed mastoiditis and was basilar in its distribution. The pneumococcic and meningococcic types were evidently blood borne infections and the exudate was diffusely spread over the convex surfaces of the cerebri. There were three examples of chronic meningitis, two tuberculous and one syphilitic. The six cases give a fairly complete picture of the type history, the morphological anatomy and histology to be seen in the more common types of meningitis, as well as an unusual type of syphilitic meningitis.

THE MITIGATION OF OLD FOGYISM*

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I use the term mitigation advisedly because prevention is impossible. The process is inevitable. Just as Minot years ago, insisted that we begin to grow old at birth or sooner, so the development of old fogyism in medicine may be said to begin with the first year of practice. Favorable results obtained by the use of measures which the young physician has been taught, start the congealing process which, as the years roll on, develops into the mental attitude of satisfaction with tried measures that practically closes the mind to the possibility of any improvement on them. At the same time the process of disillusionment begins and the ardour with which the young doctor greets every new remedy, gradually changes to a hard boiled skepticism. The results of these converging tendencies, satisfaction with the old and distrust for the new, are well illustrated by the statement of one of my teachers in surgery. In a lecture on the treatment of hydrocele, he said that every little while, he read of a new treatment for hydrocele, but each time he was filled with increasing disgust at the thought that anything could be better than tapping, followed by the injection of tincture of iodine. "Why, when the results of the treatment are absolutely perfect, should anyone attempt to better them?" Impatience with new remedies also extends to new terms and the older man often feels that new terms, as well as new remedies, should have to pass a board of censors and justify their existence before being admitted to good medical society. Furthermore, with increasing years, there is added to the loss of hospitality to new ideas and terms, an increasing difficulty in comprehending them and this, combined with the slow but sure progress of memory-failure, finally produce the perfect old fogy, who practices almost entirely on his past experience, reading and learning little and not remembering much that is learned. Luckily, death or retirement remove the majority before this stage is reached. Osler's famous proposal to chloroform practitioners at sixty, although it was made as a huge joke, emphasizes the fact that few men over sixty or sixty-five contribute anything of importance to the progress of medicine; and it is quite probable that the ideal society of the future will provide for enforced retirement on a pension, not only of professors but of all sorts of medical practitioners at the age of sixty-five to seventy. Shining examples of exceptions, in which such a rule would mean a loss to the community, will occur to every one, but the question for society to settle will be, whether the best service to the largest number will not be achieved by the clearing of the ground which such a rule would carry out. Until the arrival of that happy day, happy not only for the younger men, but for the doctors who, after lives relieved of financial anxieties, will be able to enjoy a well earned rest, it seems worth while to consider systematic measures to mitigate the situation of the older men.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, Nebr., May 11, 1927.

If old fogyism gets its start in early practice, it follows that its mitigation should also get an early start. To do this, the most important thing in planning the campaign for the future medical career is to achieve an attitude of mind which makes the study and practice of medicine, not a breadwinning routine but the chief and all important source of enjoyment in life. Much "bunk" has been written about the desirability of an avocation for professional men. For the business man, an avocation in the form of some mental exercise is undoubtedly desirable; for a physician, the avocation too frequently has a tendency to become the chief interest and enjoyment; while medicine becomes a daily grind. For a man who wishes to use his mind, nothing can or should offer greater interest than the continued study of medicine. Allowing that as a citizen, one should do a certain amount of outside reading, it will add greatly to the enjoyment of his professional life if a man can train himself to do this outside work as a duty, to which a certain amount of time is given from the main enjoyment of professional practice and research. The writer is under no illusion as to the extent to which this idea will be followed. It is merely put forth in the hope that by systematically impressing it upon the student mind, some effect will be produced in counteracting influences of modern life in which the lighter diversions tend to become the main object.

This mental attitude is finely exemplified by the sentiment recently expressed to the writer by Ernst Fuchs, the Nestor of ophthalmology. Referring to his retirement from professorial duties, he said, "Now, Gott sei dank, I shall be able to give some time to the study of the specimens that I have been accumulating in the past years." Some brilliant minds can successfully carry on more than one line of intense life interest. Trollope was passionately fond of hunting to hounds; but in addition to this he invariably wrote his daily thousand or so of words. Rowland, of diffraction-grating fame, was an eager hunter and yatchsman; but for the vast majority, such diversions merely weaken the main purpose of life. The explanation of the relative failure of so many brilliant professional men may often be found in the remark of John Sargent, who when asked why no more was heard of a young painter who had given remarkable promise, replied that perhaps he got his pleasure from too many other things than painting.

Granting, however, that the practitioner is wholly in sympathy with the idea of getting his pleasure from his practice, there are two main obstacles in the attempt of an older man to keep efficient and up to date. These are, on the one hand, the immense number of new terms which are constantly being brought into medical literature. There is an inevitable tendency to postpone the exact elucidation of such terms. But this tendency should be combatted promptly and strenuously because the influence of such ignorance becomes cumulative. Each unknown term becomes a bar to the understanding of others, until in some lines, the task of clearing up the underbrush comes to seem hopeless and whole subjects, out of the main line of practical work, are put aside as incomprehensible. To counteract this tendency, the practice should early be adopted of pouncing on such terms and following them back to their origin without delay; thus keeping the path clear for further advance. The same principle applies to terms and facts which are not new but which have been forgotten. It should be a cardinal principle in such matters to follow them up while the trail is hot. The practice of making a mental note of such things, to be looked up later, spells professional inefficiency. By conducting such little side lines of research on the spur of the moment, not only are many things done which would otherwise not be done at all; but the ease with which new knowledge is acquired and old knowledge regained is greatly enhanced. Learning what we want when we want it is a real pleasure, while digging out unrelated facts may well be drudgery. This, of course, involves having at one's elbow a reasonable number of up to date text-books. Having them in another library in the same town or even in a different room, is an entirely different thing. To make a visit to such an outside library requires a force of initiative which is seldom exercised, while to reach out from one's chair for the desired volume is a pleasure.

This leads to the question of the number of journals which a man ought to take and read. The multiplicity of journals is admittedly something of a nuisance, and if an omniscient board of censors could filter out the trash and the evanescent, the bulk of published articles could be enormously reduced. But in default of omniscience and the gift of prophecy, such an attempt to keep the decks clear would undoubtedly hold back many useful things. One thing, however, is tolerably certain; if the practitioner will, beside his local and special medical journals, take one journal such as that of the American Medical Association and will read it carefully and will follow up the side lines which it opens, he will thereby become a far better posted man than nine-tenths of the men with whom he comes in contact.

With regard to the time which a man ought to devote to his medical reading, this must necessarily be a personal equation. If the physician is thoroughly in sympathy with the idea of getting his chief pleasure from his profession, no difficulty will be encountered in putting in sufficient time. Otherwise, the temptations of outside distractions may seriously curtail his reading hours. The writer has found that by devoting at least a single hour every evening to medical work, one can go a long way toward keeping up with the times. But the alloted period must be filled with unfailing regularity or, if emergencies interfere, the lost time must be made up. If such a rule is adopted it will be found that inclination will lead the reader to far over-run his time.

With the best of intentions and plans the difficulty of keeping up to date with advancing years increases steadily on account of decreasing power of memory. This is inevitable, but it can be mitigated. Memory can be compared to a piece of wood which becomes harder as it grows drier, with this difference, that the dents in its surface produced by passing events and experiences not only are more shallow, but they are more easily effaced. Hence to retain newly acquired knowledge, the older man should resort to aids to memory which are unnecessary in earlier years. On reading an article of any length, before passing on to another, he should review the points in it which he has thought worth remembering, and on finishing a journal or book the same process should be gone through before it is laid aside. The most important points should be marked by pages on the cover and should be transferred to a ledger, which should be indexed after the lapse of a few more days. Going over newly acquired points after retiring, or while performing functions of daily routine, will be of service and no opportunity should be lost to impart or discuss such acquisitions. The practice of forming side chains with other related facts is of great value. This system, as is well known, is at the basis of most of the systems of memory culture.

One of the most discouraging features of practice, in advanced years, is the facilitiy with which important cases, which would have produced indelible impressions in earlier years, slip out of the mind as if they had never been. To guard against this, it is important to keep an indexed list of peculiar or important cases and to review these several times at short intervals. I emphasize the importance of short intervals in all these repetition aids to memory, because if longer intervals are employed, a dent made by the first impact may be completely effaced before the second is brought to bear and it thus has no more effect than the first one.

Aside from the continued necessity of earning a living, for most men, the main justification for the continuation in practice after the sixty-fifth year, consists in their having accumulated a store of experience, which, combined with a reasonable amount of clinical acumen enables them to give as good or better practical service than many younger men. All the more reason then for men who are passing the meridian to increase this valuable asset of later life by making an extra effort to fasten in their minds not only their own cases but those of which they read. Illustrated cases can, of course, be more easily remembered and pictures should be given special study to this end.

In view of the importance of remembering all possible details of treatment or diagnosis in any given case and of the ease with which they escape the memory, tables of such particulars may well be made and kept at hand. For instance, to prevent omissions of this character it is quite an aid to have printed on the border of the history card a list of possible sources of focal infection and of the more important general conditions which should be looked into, and to have these all checked off before the examination is completed and the card put away.

By way of rendering the most effective service to our patients, the practice of carrying a list of all patients under treatment in which the therapy or diagnosis is doubtful; and every night before retiring, to give half an hour or more to their consideration in the effort to avoid omitting anything that can be of service, is strongly to be commended.

Much is rightly said about the importance of cooperation between the different branches of medicine. This might be called cooperation in a horizontal plane; but cooperation along vertical lines is also of great importance. In every medical group, young men, full of new [illegible] and theories, can be of great assistance to their older colleagues, who in turn can offer the priceless gift of well preserved and well digested experience.

DISCUSSION

W. L. ROSS, Sr., M. D., (Omaha): I have enjoyed his paper very much.

It seems to me one's life is mellowed by experience, and as the age is being prolonged at which a man is still young and active, and can best serve his patients who apply to him, the statement that he has outlived his usefulness at the age of sixty-five should not go unchallenged. I cannot conceive of any man who is fairly well nourished, as a man that is probably equal to fifty, who should think of retiring at sixty-five. Our lay journals are full of the fact no man should retire at that age. He should hang onto his business. The majority of the business of the world is in the hands of the men who are sixty. A man may have an imaginary scheme in the younger period of his life, but he has not means to put it into action. Look at our few oustanding exceptions like Edison. He is still active and grappling with the problem of initiating a rubber plant in the United States. Suppose he should retire? If a man wants to be unhappy and decay rapidly, it is all right to retire, because he has nothing to look forward to to stimulate his mind.

If one should follow out the strenuous regime the doctor has proposed to us of reviewing our cases in the evening before retiring, when we are already tired and in no condition to do so, it seems to me he is already doing the thing that will quicken his age and reduce his usefulness to himself and his clientele. A lot of these things are trivial. In trying to keep abreast with new terms and remedies, lots of them are thrown in the waste basket.

I want to commend one thing the Doctor suggested. If a man will keep one good text book—a late edition of the practices in surgery and therapeutics—on his desk, he can take that up and review the things in a short time. I never run to a magazine to look up any condition of practice or any mooted question. I go to a recent textbook and can find it in a nutshell. My journals may be scattered. I do not think it is necessary for us to try to keep well posted on these journals. In the last thirty years, the outstanding advances are the local foci of infection. If we have these well in hand and their far-reaching results, it seems to me that is pretty nearly everything that is necessary in addition to our former knowledge.

There are a lot of new remedies put out by manufacturers. It is not necessary to keep track of all of these. The principal things we older men want to remember are the things we have learned by experience and put them in use, and we will do our patient just as much good as the young fellow who has a whole lot of new things to try out.

I do not think it is time well spent to copy down the different symptoms and things that will cause the different kinds of diseases. We have them pretty well in hand. Lots of them are repetitions of the things we have learned and read about.

I think the doctor's advice to retire is bad. His advice to keep well posted is all right without this night study.

DR. GIFFORD, (closing): I did not expect to get off so easy as that!

I sympathize with Dr. Ross about the night study. In order to keep awake I stand up. When I go to sleep my knees give away and that wakes me up.

I want to add one word about the things you have at your elbow to refer to. I feel like putting in a file of one good journal. If you can keep a file of the American Medical Association Journal it will help out on textbooks a good many times. If you have a bad case and want to be sure you are not missing something, run over the index and find things that will help you out. Most of us have not time for this, but it would be a mighty good thing if we had.

SOME NEGLECTED FEATURES IN PREVENTIVE PEDIATRICS*

HERMAN M. JAHR, M. D.,
Omaha, Nebraska.

The object of my communication this evening is to discuss with you three problems in child care as they affect us in our daily practice; whether our work be limited to children or not. I am fortunately in a position which enables me to make statements that are based upon simple facts rather than theory. I have nothing new or startling to offer, but merely wish to draw your attention to some of those vital features in preventive medicine which, in my opinion, are being overlooked. Today we are confronted by the following problems:

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*Read before the Omaha-Douglas County Medical Society, April 26, 1927.

1. Each year thousands of children in this country die from diphtheria. This disease is entirely preventable if we but put forth an effort to educate the parents in our various communities.

2. In the year 1925, according to Dr. W. W. Keen(1), the United States ranked second in the incidence of small pox. India came first.

3. We have in our schools thousands of children, who, for reasons other than mental deficiency somehow become the dubs and misfits of their respective classes. This large group of every school population is made up of children who need medical care and advice on the part of the family physician. Under proper care these victims cease to be a burden to themselves, their parents, and their communities. With your indulgence I shall discuss these conditions individually, and as briefly as is compatible with proper delivery.

Diphtheria: I said that diphtheria is a preventable disease. To those who doubt this statement let me address this question: Can any disease be more ideal from the point of view of prevention than one in which we know (a) the causative organism, (b) the test for susceptibility and immunity, (c) the method by which immunity may be conferred?

All these factors have been worked out diligently, scientifically, and put on a practical and applicable plane. The technique of testing and immunization is one of the simplest that we have in parenteral medication. Subcutaneous injection of 1 cc. of toxin-antitoxin is all that is required in all children. Those who show no reaction locally are considered immune. Those showing an inflammatory local reaction at the site of the injection are considered susceptible to diphtheria, and receive two additional injections of toxin-antitoxin(3). The dangers attending the careful administration of toxin-antitoxin are practically nil, as shown by Park and his co-workers, who by now have administered about one and one-half million doses of the product.

The procedure has until not long ago been looked at with disfavor by those of us who have been skeptical about its effectiveness. This is but natural when we look back upon some unfortunate incidents which occurred in several localities as a result of administration of an ill prepared or decomposed product. These accidents created the impression both among the laity and profession that the administration of toxin-antitoxin is connected with danger and difficulty. At present, however, with the refining of the material by Dr. Park and his assistants, and the cooperation of the various pharmaceutical houses, immunization against diphtheria has become a procedure not only of proven value but, indeed, a method by which the disease may be exterminated from localities in which immunization is universal. If that sounds Utopian let us recall that today there are several communities in this country where but one or not a single death from diphtheria has been reported for 1926. One of these is Auburn, N. Y., a city with a population of 30,000 inhabitants, representing practically all races and nationalities, their financial and social status being that of average in American cities of that size. Immunization there began in 1922, and carried out diligently and persistently by Dr. Sears and his co-workers. In 1926 there was not a single death from diphtheria in that city. The Auburn results can be duplicated in any community where a concerted effort is made by the profession directly and through the agency of some of the progressive institutions in the given locality, to acquaint the public with the effectiveness of immunization as shown by figures and facts where the procedure has been applied. In addition, every physician should consider it his duty to instruct individually the parents of the children under his care, on the following points:

1. Diphtheria is a very serious disease that carries with it a high morbidity and high mortality rate.

2. This disease is preventable.

3. Most children between the ages of six months and six years are susceptible, and no child is to be considered immune unless he shows a negative Schick test.

4. A child who has had diphtheria is not necessarily immune to the disease, even though he has had antitoxin and made a good recovery.

5. In order to stamp out this dread disease all children should be Schick tested and those found susceptible should receive a series of toxin-antitoxin injections and thus be rendered immune to diphtheria.

Smallpox: I quoted a statement by Dr. Keen(1) that India, with a population of 319 million, is the only country whose incidence of smallpox exceeded ours. That this is not merely an accident but a natural outcome of our negligence to vaccinate early, allow me to quote to you a few lines from the Statistical Bulletin of the Metropolitan Life Insurance Co., for September, 1920: "The people of America in recent years have become careless with regard to the dangers from smallpox. There has been a long period of comparative freedom from severe forms of the disease, and the cases which have occurred have been few and mild. The public is indifferent to the serious smallpox situation at the present time. * * * The marked falling off of universal vaccination has resulted in an increased prevalence of the disease. At the present time smallpox is a real menace to the health and welfare of the people of the United States and Canada." This statement was made in 1920. In 1922 there were 28,328 cases of smallpox. In 1923, 27,756, in 1924, 49,587 cases. In 1925, the latest figures which were available to me, the number of smallpox cases reported in this country was 55,538. In Omaha there were 306 cases reported in 1926.

A survey as to the causes of laxity in vaccination was reported by Dr. L. V. Frankel(2) in 1921 (Am. J. Public Health, 1921, Nov.). This author states that in the North Central States the chief causes are public indifference, inadequate legislation, opposition of parents, Christian scientists, irregular medical cults, and organized anti-vaccination movements. It seems to me that the main difficulties in vaccination arise in public indifference. Yet I am optimist enough to put that down as an obstacle which is comparatively easy to overcome. The medical profession has held the confidence of the public for centuries, and undoubtedly will continue to do so in time to come. We have knockers in the form of cults and various trashy magazines, but unless we fall down on our principles of *service*, every blow that we receive in the form of a preventable epidemic is only a reminder that humanity needs us, and that perhaps we have ourselves been negligent of its indifference. With this idea in mind, it behooves us all to talk vaccination to every mother and father of an unvaccinated child of over six months. In my short experience I have found it at times easier to convince a mother of the benefits of immunization than of the uselessness of rocking the baby to sleep or nursing him whenever he cries. I confess that it is not by any means an easy task to "sell" a vaccination to a mother of a six months old child when the boy next door who is twelve years old "did not have to be vaccinated." This difficulty is often increased when the mother or father had had a little trouble with their own vaccination, fifteen or twenty years before. However, I begin on my campaign when the baby is two or three months old, and by the time the child is nine months or twelve months old the parents' morale usually breaks down, and they give their consent to vaccinate. Right here I am ready to admit that it takes time and patience to convince the average parent of the benefit of immunization, but I am certain that if every physician would make the effort to educate the patient individually the task would be much easier. Judging from our recent experiences with the legislature, I see but little hope for the present in the way of statutory compulsory vaccination, so that if smallpox epidemics are to be averted it is up to us to first convince the voters that vaccination laws are necessary. They will do the rest.

Nutritional factors: We frequently see children of school age, who in spite of negative physical findings are underweight, eat poorly, sleep poorly, are restless and fidgety. These children are usually dismissed with a prescription for a tonic, and advice on what to eat, especially to go heavy on the vegetables and heavier on milk. The child, eager to satisfy both physician and parents, on leaving the office, promises to eat all he can. But, alas, try as he may, he just can't eat much. The capacity of his stomach seems to be reached by the time the second course arrives on the table.

A careful history will invariably reveal the fact that this type of child is suffering from overwork and under-rest. This applies particularly to children in the higher grades. The school curriculum is quite heavy in itself, but is borne well by the average well child. However, most children nowadays, thanks to the ambition and fair prosperity of the average family, are taught from one to two, three or four branches of the fine arts. Thus it is not unusual to find a girl who in addition to her school work, takes music, dancing, and dramatics.

Allow me to quote to you one of about a dozen or more cases of this kind that I have seen in the short time that I have been practicing here:

J. M. is the thirteen year old daughter of a very intelligent family. She is the only child, and her parents want to do all they can for her. The girl is very bright, one of the first in her class—8th grade. An analysis of her daily activities is as follows: She goes to school from 9 a. m. to 3 p. m. From 4 to 5 she studies dancing twice a week, and piano twice a week. She arrives home at 5:30 p. m. tired almost to the point of exhaustion. She lies down for a half hour, has her dinner and practices on the piano one-half hour, and dancing one-half hour, daily. After that she does her homework for school. Add to this program frequent rehearsals for school entertainments and public recitals, and you will not wonder that Jane is eight pounds underweight, has no appetite and is always tired and restless, and practically never free from colds.

The "tonics" and "blood purifiers" so frequently asked for, and even more frequently received by these patients, has, as may be expected, very little effect as long as the above program continues. On the other hand it is gratifying to see these children thrive both in health and disposition when a proper regime is outlined whereby the child has sufficient time for outdoor recreation and physical and mental rest.

The School Problem: The physician is frequently asked advice on problems pertaining to the welfare of the school work of the child. With the Child's Guidance Movement practically only begun, but rapidly spreading, we may expect, as time goes on, to be called on more and more to help clear certain mental difficulties which the child and the parents are not able to solve. Practically every school in this country has pupils who for some reason or another fail to progress with their classmates. The number of these unfortunate children in a given school varies directly with the population of that school. I am not referring to the children who are mentally defective as a result of birth injury, endocrine disfunction or any other cerebral disturbance which puts them in the class of moronism, imbecility of idiocy. (Much can be done to make their lot less burdensome, too,(4) though these victims need specialized training of various sorts). I have in mind the child who comes from an apparently mentally well-balanced family, shows no stigmata of disturbances in intellect, with a fairly good intelligence and behavior, yet who does not make the grade in school.

A good many of these children are the victims of poor eye-sight, chronic infection of the upper respiratory tract, poor state of nutrition, all of which predispose to poor mental activity. When to this condition is added the ambition of solicitous parents who insist on their children growing up "talented" in the fine arts previously referred to, these youngsters become irritable and overworked, and rapidly develop into what we call the neurotic child. Excessive fatigue, night terrors, anorexia, are some of the most frequent manifestations brought about by worry over school duties, which had not been carried out. These children are extremely unhappy, and only too often are thrown into that category known as backward children. During my studies in Dr. Wiles' Clinic for Disorders of Conduct. I had the opportunity of seeing a good many of these youngsters. It was remarkable to watch their intelligence quotient go up from 70 to 90 and even 110 when the causes of their difficulties were explained to their parents, and cooperation of the family was enlisted to relieve the pressure to which the child had been subjected for from several months to three or four or six years. Removing of correctable physical defects plus a few words of encouragement together with an outline for healthful recreation and rest was all that was necessary in many cases to pull a child out of a grade where he had spent two or three or four terms.

COMMENT

Some of you may ask what bearing do these statements have on preventive pediatrics. My answer is that the conditions above enumerated can be averted if only every father and mother were given to understand the necessity of the regular periodic examination before the beginning of every school term. Many of the behavior problems which we see are the kind that could have been averted if correctable defects had been attended to at the beginning of the school term. We talk a lot about the periodic examination for adults. "Watch your blood pressure" is quite a prominent slogan in preventive medicine, and every adult now seems to be aware that he has a blood pressure that should be watched, just like every woman knows that she has a weight and must reduce. I sometimes wonder whether the popularization of these ideas is not due more to the advertising of some of our commercial houses than to the influence of the profession. Unfortunately the economic contribution of children, as children, has not reached the stage where their health, physical and mental, can be exploited with great profit. It is fortunate indeed that the governments, both Federal and State appreciate the economic value of the child, and their work both in education and financing the various health programs cannot be too highly commended.

SUMMARY

An effort has been made to point out that:

1. Certain infectious diseases, particularly diphtheria and smallpox can, and should be eradicated. To do this the profession both collectively and individually should urge early immunization against these diseases.

2. Many of our school children are overworked and under-rested.

3. All children should receive careful physical examination at least before the beginning of each school semester.

4. To do this it is the duty of every physician to educate the family under his care to the needs of periodic examination not only of the adults, but of the children as well.

In conclusion, I wish to express my heartfelt gratitude to all those who made my study in New York City an everlasting pleasure. Special thanks are due to Dr. Bela Schick, Dr. Herman Schwarz, Dr. Ira S. Weil, of Mt. Sinai Hospital, Dr. William H. Park, Dr. Abraham Zingher, and Dr. Jesse G. M. Bullowa, of the Willard Parker

Hospital, Dr. Roger Dennett and Dr. Marshall Pease of the Post Graduate Hospital. Nor can I forget the courtesies and encouragement extended to me by my Omaha friends, Dr. McClanahan and Dr. Hamilton, Drs. Clarke and Moore. My contact with these men has been an inspiration, which I fear, I shall never be able to repay.

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PITFALLS IN LABORATORY DIAGNOSIS*

JOHN T. MYERS.

There are two things I would like to emphasize—two things I always try to impress upon students, and they are these: First, laboratory findings should be used as part of the general diagnostic procedure, requiring interpretation just as do points in history, physical findings, and so forth, and, second, that the laboratory man and the clinician should cooperate both in choosing procedures to be done and in interpreting things which are done. Sometimes that will save useless work or gain time in diagnosis. A fe wcases will illustrate some of the pitfalls.

In the first place that common laboratory test, the Widal reaction, has many pitfalls. I want to mention two cases as illustrations. A few years ago, a case in which I did not do the work but with which I am familiar had the following characteristics: Case suspected of being typhoid and upon making Widal test all three organisms, typhoid, paratyphoid A and paratyphoid B were agglutinated at a dilution of 1 to 80. That meant group agglutination. At a dilution of one to 200, one of them, the typhoid, dropped out, and only A and B agglutinated. At a dilution of 1 to 500 only the paratyphoid B agglutinated. Hence the diagnosis was made. That pitfall was missed.

Another illustration will serve to show how the laboratory man and clinician must cooperate. There was a case which was suspected of falling into the typhoid group, the Widal was made by a laboratory and report rendered, "negative to typhoid". This lead the clinician to make a diagnosis of "intestinal flu". A short time afterward another Widal was made by a different laboratory and agglutination was negative for B typhosus and B. paratyphosus A but positive for B. paratyphosus B. The clinician had been misled in his diagnosis by the laboratory simply because of lack of cooperation and lack of proper interpretation.

Another case which illustrates the pitfalls in laboratory diagnosis is as follows (this was one of Dr. Hamilton's several years ago): In this instance the clinical findings presented were those of meningitis. The spinal fluid when removed was under pressure but no pus cells and no bacteria were found. Repeated examinations gave the same results. At autopsy a localized area of pus formation was found on the convex surface of one cerebral hemisphere. Apparently the pus and organisms had not gained entrance to the spinal fluid. I mention this because it illustrates so well one of the facts I spoke of, that one must know all of the conditions to interpret laboratory findings. Here most of the laboratory findings were absent, the clinical findings were present. We find the opposite condition sometimes, that is a condition in which the clinical findings are absent and the laboratory findings are present. We know perfectly well that we have carriers of organisms where we have laboratory evidence of infection but no clinical findings. This is common with the meningococcus, the typhoid bacillus, the diphtheria bacillus and others.

Another illustration of the difficulties of laboratory interpretation has to do with the work of the toxicologist. There are several ways in which we meet difficulties in this field. Some of these depend upon legal aspects. Many people in a case where death is suspected to be due to poison, will send the stomach only to the laboratory. I will use three cases to illustrate some difficulties which arise in such situations.

In one case which came to me a few years ago, the stomach and its contents were sent in. The findings were negative. It was suggested that the liver and kidneys be submitted. In these organs were large quantities of strychnine. It was a rather unusual case, because I found out later the strychnine was not given by mouth, but had been injected subcutaneously.

Another case illustrates a different situation. In this instance the stomach only was sent to the laboratory but the difficulty was that it was not addressed definitely to any one person and passed through several different hands. Also the physician sending it had apparently failed to make notes as to what he did because he testified that he had sent the stomach and contents by mail. We had to testify that it came by express. Here was a lack of cooperation. In that instance the body was exhumed and the liver and other organs which had not been sent in in the first place were examined and strychnine extracted. I mention this to show the necessity for laying the foundation for legal work, in other words, the necessity of being careful to leave no gaps in a possible line of evidence. The best way, if at all possible, even if the material has to be transported a considerable distance, is for some one to personally convey the toxicological material to the laboratory. Then there can be no difficulties of this nature.

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*Read before the Omaha-Douglas County Medical Society, April 12, 1927.

One more case along the same line. The material was sent to the toxicologist, this time all of it, the stomach, stomach contents, liver, kidneys and so forth, but it had been embalmed. No evidence of poison was found in any of the organs, but an element of doubt remained because there are a few poisons which cannot be detected in the presence of formalin, methyl alcohol and the cyanides particularly. Hence the material should alwsy be sent in before embalming.

I am giving you these illustrations to emphasize the two ideas I started with, that laboratory diagnosis requires interpretation just as does any other finding, and that it is necessary for the clinician and the laboratory man to cooperate both in procuring the material and interpreting the results.

NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST, AND A. J. MILLER, M. D., PATHOLOGIST.
Edited by
L. L. Davidson, M. D.

CASE NO. 21561. January 21, 1927.

A pale, young housewife, age 28 years, was brought to the ward on a stretcher, 12-9-26, complaining of:
Chills and fever.
Dyspnoea.
Epistaxis.
Puffiness of the eyelids.

She was entered on the Medical Service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: The patient had been well before two normal deliveries fifteen months apart, the latter occurring five years ago. Four years ago last June these two children were burned with their home. She suffered a nervous breakdown necessitating getting away from their old environment and moving to Montana.

On May 10, 1923, she gave birth to a normal boy. Her doctor told her at that time that she had a weak heart.

In Nov., 1925, she was given the same information by another doctor at the time of another delivery. There were no further details given as to her heart condition, no cardiac symptoms having been experienced.

According to her husband, for the last two years the patient's feet have been swollen on rising so that she had difficulty in getting her shoes on. This swelling would disappear after a couple hours activity.

For the past year the patient lost weight from 160 to 130 pounds, the latter being her weight at entrance to the hospital. There had been a gradual increasing weakness and shortness of breath during the past year.

Her last trouble began two months before entrance. When carrying water upstairs she felt a severe pain over the heart which extended to the left shoulder, arm and hand. The pain lasted about fifteen minutes and disappeared leaving a dull pain for about two weeks. A doctor was consulted who confined her to bed for six weeks because of this pain, weakness and palpitation. On getting up after this six weeks period her legs became swollen and she was very weak. Seven weeks later and about one week before her entrance to the hospital she was taken to another doctor who informed her for the first time that she had fever. Shortly afterward she noted chills. It could not be learned whether the chills and fever existed prior to this time or not. She was sent to the hospital with the brief description "pulse 30, only one sound at apex, edema of ankles, dyspnoea, albuminuria and anemia."

PREVIOUS ILLNESSES: Before her childbirth illnesses she had always been healthy. There was no history of tonsillitis, rheumatism, chorea or venereal infection.

FAMILY HISTORY: Her mother died at 75 of tuberculosis. The cause of her father's death at 48 was unknown. There was one brother, one sister and a husband living and well There had been four normal children and no miscarriages.

PHYSICAL EXAMINATION: T. 102 (Rectal); P. 140; R. 40. A well-nourished, pale woman lay in bed with panting respirations, and an anxious expression. The eyelids were puffy, the skin was dry and the lips appeared waxy. She was trembling as though having a chill, and occasionally hiccoughed. She was semi-stuporous and the history had to be obtained chiefly from a friend and later enlarged by her husband.

Head: The eyelids were puffy. The pupils were equal and reacted to light and accommodation. The ears were normal. The nasal septum deviated to the right. The alae dilated with inspiration. The teeth contained many fillings but no crowns. They were in good repair. The tongue was fissured and dry. The tonsils were small, buried and pus could be expressed from both. The anterior pillars were injected. There were herpetiform lesions on the lips.

Neck: There were no palpable glands in the neck. There were visible pulsations and a thrill was felt on both sides of the neck. It seemed distinct and apparently systolic in time. No note was made about murmurs in the neck.

Thorax: Development was symmetrical. Expansion was equal. Fremitus was unchanged but there was a questionable slight dulness in both bases. A few rales were heard at the bases more on the right side.

Cardiac: The apex impulse was diffuse and felt in the fifth interspace in the nipple line. No note was made about right-sided enlargement and no thrill mentioned. The rate was 120 per minute and regular. Over the precordium there was a loud systolic murmur which was heard best at the apex. This murmur was musical in quality. In addition a presystolic murmur was heard over the mitral area followed by a snappy first sound which was transmitted to the right. The pulmonic second was accentuated. B. P. 140/62.

Abdomen: The abdomen was soft and doughy. There was a little tenderness in the upper left quadrant and a firm, somewhat tender, mass was felt in the splenic region. The liver edge was barely palpable at the costal border and by deep palpation most of the abdomen appeared to be tender.

Extremities: The finger nails were cyanotic. The ankles showed slight pitting edema. The reflexes were slightly exaggerated but otherwise normal.

LABORATORY: Catheterized urine specimens had a low fixed specific gravity, of 1008 to 1010, and were acid in reaction. The specimens all contained a 2 and 3 plus albumen, no sugar or diacetic acid and had a few red and white blood cells and numerous granular casts to the field.

All hemoglobin determinations were below 20 per cent, R. B. C.'s below 1,500,000, and the W. B. C.'s were around 5,000. The neutrophiles varied from 75 to 87 per cent.

The blood Wassermann was negative. The blood non-protein nitrogen was 128 mgm. and the creatinine 4.5 mgm.

The blood culture taken on 12-11 was positive in twenty-four hours for streptococcus viridens.

PROGRESS: The patient was in the hospital six days. The temperature was septic in type ranging from 98° to 102°. The pulse correspondingly varied from 90 to 140 and the respirations from 20 to 40.

Dec. 10. On the second day after entrance the patient complained of pain in the right side of the chest on coughing and some pain over the heart. She lay mostly on the right side. Cough was not productive. Stupor seemed to be pending.

Dec. 11. The blood culture taken yesterday was reported positive for streptococcus viridens.

Dec. 14. About 8 p. m. she began to moan and fifteen minutes later had a seizure like a convulsion. She could not be aroused, did not respond to pin stimulation, reflexes were absent. She gritted her teeth. Her limbs became limp and cold. Her eyes rolled from side to side. The respirations were Cheyne-Stokes in type. There was involuntary urination. The Babinski, ankle clonus and obvious paralysis was negative.

Dec. 15. She remained semi-stuporous. Cheyne-Stokes respirations continued and the patient had a few clonic convulsions before each hyperpnoeic period began. There was a bilateral Chvostek. Examination of the chest anteriorly revealed the upper border of the liver in the 5th interspace. There were coarse inspiratory rales in the upper chest followed by an expiratory grunt. Flatness and diminution of breath sounds existed in the left base below tip of scapula. Question was raised of a friction rub in the left axilla. The area of cardiac dulness extended to the anterior axillary line, and down below the fifth interspace. Over the left sternal border a superficial, high-pitched sound was heard apparently in diastole. The heart tones were rapid and covered by grunt. During the apnoeic stage an accentuated first sound was heard over the mitral area which diminished as we progressed upward. Over the pulmonic area both sounds were accentuated but there was no evidence of murmur. The heart tones could not be distinguished over the A2. The heart rate, rhythm and intensity were totally irregular. Death occurred only a few hours later, five days after admission.

DR. DUNN'S DISCUSSION

There are two types of records, (1) the records made for others, and (2) the record made for oneself. The latter type is an individual thing, the purpose of which is to bring to mind by association, observations made at the time of examination. The main object of hospital records is to record data that will be of greatest use to other persons. Such records must be couched in terms and language that fit into the experience of other individuals. The nearer one comes to using terminology that is common coinage, the more apt will the record be to recreate approximately the intended conception in another individual. If the terminology be clear and of common usage, it will recall relatively the same to any physician reading it.

In the case under consideration today we have the syndrome of chills, fever, dyspnoea and puffiness of the eyelids. Three conditions are immediately suggested: Nephritis, heart failure and general infection. They occur together in the disease called today subacute bacterial endocarditis, formerly called malignant or ulcerative endocarditis.

The first indications of cardiac trouble were in 1923 and again in 1925. Undoubtedly the doctors at these examinations had found a murmur, for the usual thing back of most physician's statements that the patient has a weak heart is the presence of a murmur.

At about this time the husband remembered that the patient's feet were swollen in the morning. This does not seem to have been a straight heart manifestation. That the swelling of the feet was present on rising points towards an edema which was more chemical than static. Nephritis is likely. This view is supported by the fact that the swelling subsided after activity.

In the past year there had been a loss of weight. In an individual of 28 years the common things that result in loss of weight are:

1. Tuberculosis.
2. Thyrotoxicosis.
3. Subacute bacterial endocarditis, cases of which are often mistaken for tuberculosis. They cough a little, are emaciated, are on the down grade, and have an afternoon rise in temperature.
4. Diabetes.
5. Starvation. A number of women eat little or nothing. Dietetic management is necessary for such individuals.

Two months before admission there was a

history of severe precordial pain which radiated to the left shoulder, arm and hand followed by a cardiac ache. The two explanations commonly offered for pain of cardiac origin are thrombosis of the coronary artery and acute dilatation. The late Sir James Mackenzie studied cardiac symptomology as thoroughly as anyone. It was his opinion that cardiac pain was of muscular origin, a manifestation of a fatigued, poorly nourished, improperly contracting heart muscle. He did not differentiate between pain of aortic and of cardiac origin but believed that these pains belonged largely in the same class, differing in degree. Such an explanation would seem to fit in with our case. Her symptomatology was more that of cardiac muscle strain. If a coronary artery had been plugged at this time she would have had a much more stormy course than that shown by the record.

In the physical examination the outstanding features were pallor and panting respirations. Pallor with dyspnoea is an important symptom complex. What conditions would you associate with them?

Student:

1. Subacute bacterial endocarditis.
2. Chronic inflammation of the kidneys.
3. Severe anemia, either primary or secondary.

Dr. Dunn: To this list one more condition must be added.

4. Aortic insufficiency, usually luetic, will give an appearance of pallor, with dyspnoea. On the contrary tuberculosis is seldom suggested by pallor. Usually tuberculous patients are flushed. Empyema, on the other hand, results in pallor and would have to be included in the group with the other infections.

In the examination of the oral cavity, infected tonsils were demonstrated. Maybe this was the seat of the original infection but it is too late to take out tonsils after the diagnosis of subacute bacterial endocarditis has once been established. I cannot remember ever having seen a case of subacute bacterial endocarditis benefitted by tonsillectomy. We can all recall cases that have presented themselves with cardiac murmurs and suspicious tonsils, who did not follow the advice for tonsillectomy and who later appeared with sub-acute bacterial endocarditis.

There were herpetiform lesions on the lips. I do not know what these lesions indicate here. Herpes occurs most frequently in (1) pneumococcus infections; (2) "flu" or colds; (3) malaria; (4) epidemic meningitis.

"There were visible pulsations and a thrill was felt on both sides of the neck which was distinct and apparently systolic in time." There are certain conditions in which such thrills may arise in this region:

1. Vascular goiters.
2. Aortic insufficiency.
3. Aortic stenosis.
4. High pulse pressures.
5. Arterio-venous aneurysis.

In this particular instance there was nothing definite about the systolic murmur heard at the base of the heart. There was no goiter nor evidence of aortic insufficiency. With the endocarditis present, there may have been involvement of the aortic valve of such a type that a thickened or ruptured valve flapping in the blood stream produced the thrill in the neck such as described. This is most apt to occur in cases where there is a high pulse pressure. There were no symptoms of arterio-venous aneurysm such as cyanosis, edema of face and upper extremities, etc. We have nothing on which to explain this thrill.

In the examination of the heart, it was noted that the apex beat was diffuse and broad in the fifth interspace, which means that there was a broad heart, a considerable right ventricular increase. Over the precordium there was a loud systolic musical murmur heard best at the apex. A pre-systolic murmur was heard at the mitral area followed by a snappy first sound which was transmitted to the right. With the pre-systolic murmur, the systolic murmur, and the accentuated first sound we are justified in diagnosing an endocarditis with both stenosis and insufficiency of the mitral valve. No findings were given on which a diagnosis of aortic valve disease might be postulated.

In the examination of the abdomen, a "doughy" feel was recorded. We will interpret this as edema. A mass was mentioned in the splenic area. Probably this was a spleen. It would be better if the individual, in writing up his findings, would make a more complete description of what was felt and make a decision as to whether or not it was spleen.

The laboratory examination of the urine indicated nephritis. Anemia was apparent. Leucocytosis is not essential to the diagnosis of endocarditis. There was evidently a considerable amount of non-protein retention.

In the progress notes of the patient a fair description was given of the condition commonly called uremia, i. e., edema of the brain.

It would seem from our survey that the following existed:

1. Subacute bacterial endocarditis.
2. Mitral stenosis and insufficiency.
3. Possibly aortic stenosis—the most likely explanation of the thrill.

4. Chronic focal nephritis. This is an inflammatory kidney of the type which occurs in subacute bacterial endocarditis.

5. Edema of the brain, from the history of convulsions, and chain of symptoms presented.

6. Although the evidence is not complete (lacking fremitus and shifting dulness to accompany the flatness and diminished breath sounds), pleurisy with effusion on the left side is suspected.

7. Acute splenic tumor.

DR. MILLER'S DISCUSSION

External Examination: The body was well nourished. The skin and joints were free from lesions.

Body Cavities: There was about 200 cc. of clear straw colored fluid in the peritoneal cavity. The spleen presented slightly below the costal-margin. The left pleural cavity contained 600 cc. and the right 200 c.. of clear straw colored fluid. Recent fibrous adhesions were found over the anterior, lateral and posterior aspects of the right lower lobe. The pericardial cavity contained 60 cc. of clear amber fluid.

Heart: In situ the heart extended 4½ cm. to the right and 10 cm. to the left of the mid line. Its weight was 360 grams. The pericardium was slightly thickened over the anterior aspect of each ventricle. The coronary arteries were only slightly damaged by atheroma.

The right atrium was moderately dilated and hypertrophied. The right ventricle was slightly enlarged and its wall 1½ times normal thickness. On the left side the chambers were not enlarged and the walls not thickened.

On the left side the endocardium was smooth and glistening everywhere save in the undefended space where an ulcerative lesion 8 mm. in diameter was found. The wall contained old scar tissue. On the right side large vegetative masses were found on the tricuspid leaflets, chordae tendiniae and septal wall down to the papillary muscles. The ulcer was probed from the left side, the probe passed through the septum membranaceum into a large vegetation on the septal leaflet of the tricuspid valve but there was no communication between the chambers. The tricuspid orifice as seen from above was narrowed by the vegetative masses to 4 mm. It could be stretched to admit an 8 mm. probe without tearing. The tricuspid leaflets contained considerable scar tissue. The histology was that of infection with much granulation tissue varying in age.

Lungs: The left lung weighed 580 grams and the right 760 and they were similar save for the adhesions on the right. The pleura contained recent petechiae. The tissue was subscrepitant. There were numerous nodules made by infarction and these were in various stages of healing. Some of them were responsible for the adhesions on the right and others were very recent and hemorrhagic. The sectioned surface was wet with fluid from edema. The color was mottled, some infarcts dark blood red, others grayish and brownish and a few were soft. Sections revealed the histology of infarcts.

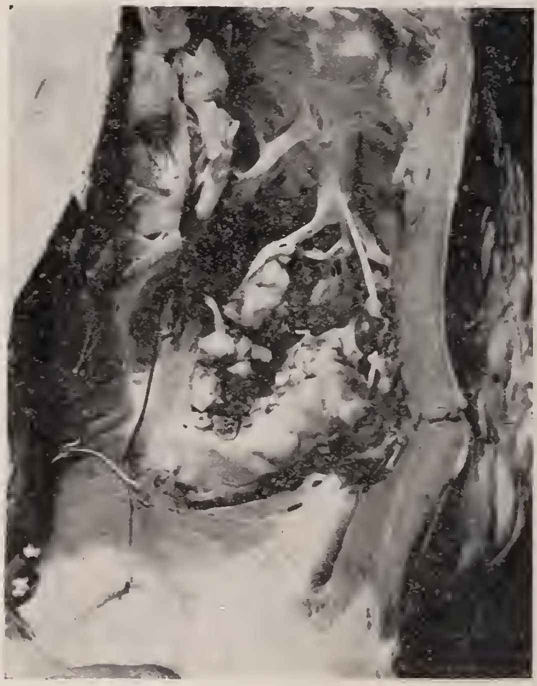

Fig. 1. Large vegetations on tricuspid leaflets as seen from apex of heart. Vegetations extend onto chordae tendinae and into atroventricular septum down to papillary muscles.

Gastro-Intestinal Tract: Not remarkable save for congestion.

Liver: The weight was 1950 grams. It was unusually soft and dark blotchy colored. The sectioned surface was very faintly mottled with the "nutmeg" pattern. Sections showed marked congestion of the blood sinuses near the central veins and a very little lipoid substance.

Spleen: The weight was 780 grams. Its color was more red than normal. Pulp was very abundant. There were no infarcts. Sections revealed an excess of connective tissue and huge, markedly congested sinuses.

Kidneys: The right weighed 380 and the left 330 grams and they were similar. No infarcts were found. The capsules stripped easily leaving a smooth light colored kidney tissue with petechae. The proportion of cortex to medulla was good.

The sections reveal a typical picture of acute, infectious, glomerular nephritis. Bacterial emboli lodged in the capillaries of the tufts, completely or partly occluding them. The changes which follow were dilitation of the tubule system and death of its epithelium. Often large casts are seen. The epithelium disintegrates in situ or sloughs out and the space occupied by the tubule is replaced by scar tissue. The epithelium, having lost its supply of blood, cannot repair.

The viscera of the pelvis and adrenals were not remarkable.

The brain was removed but no lesions found save for an excess of fluid in the meningeal space.

Comment: This patient's condition consists of vegetative endocarditis of the tricuspid valve and some of its complications, namely: Enlargement of the heart, passive congestion, pulmonary infarction and embolic, bacterial, acute glomerular nephritis.

The scar tissue in the valve leaflets indicate that the endocarditis is much older than the terminal illness and confirms the physicians impression expressed four years ago.

The etiology is streptococcus viridans and the pathology is typical of it.

The infarcts of the lungs are no doubt the result of emboli from the vegetations. The kidney lesions are also embolic. They are small because the lung capillaries filtered out the large emboli. The fact that embolic lesions were not found in the skin or other parts of the body is very remarkable and also unexplainable. There are a few known factors, however, that should be mentioned. .One is the specificity of tissues and organisms. Another is the character of the blood supply. Vascular supply of the skin is very rich with abundant anastamosis. The smaller kidney vessels have no collaterals. It is very probable that the pericarditis is embolic for the same reason. The brain, however, for the same season should have embolic lesions but it did not.

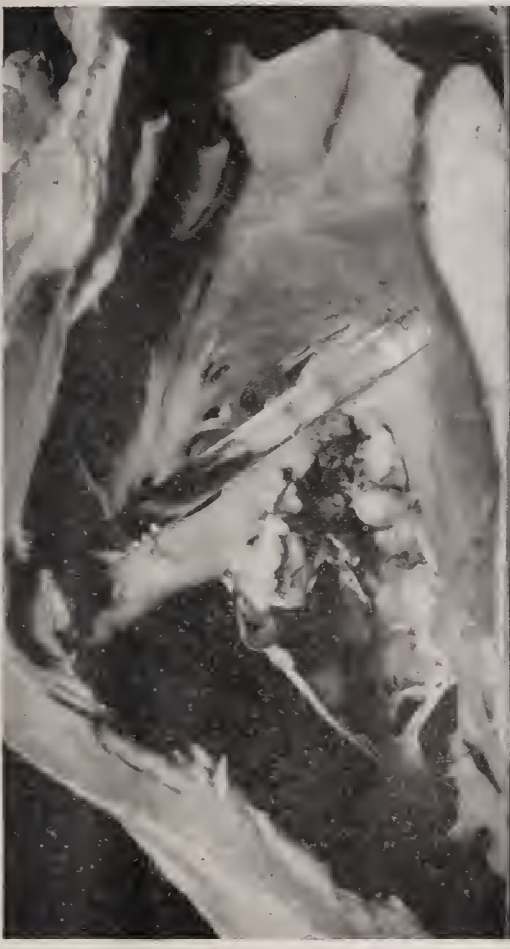

Fig. 2. Tricuspid valve from above. The degree of narrowing by vegetative masses is seen. Orifice about 4 mms. wide.

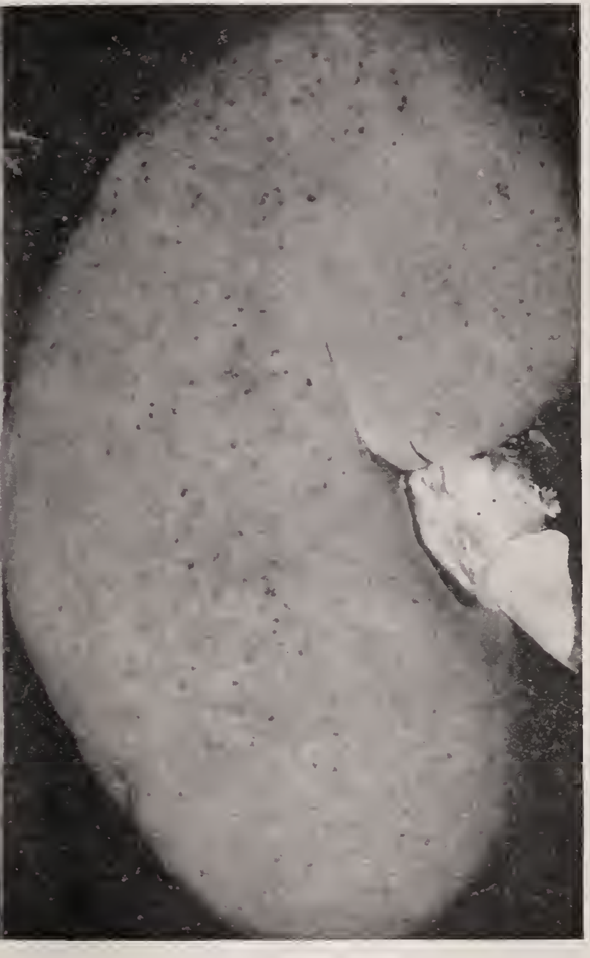

Fig. 3. Kidneys weighed 380 and 330 and were similar in appearance. No infarcts were found but the kidney tissue was studded with petechae.

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SOME POLICIES OF ORGANIZED MEDICINE

From an abridged report, at hand, of the actions of the House of Delegates of the American Medical Association meeting at Washington, D. C., one may review the policies of organized medicine as they stand today:

Articles of an educational nature on medical or health subjects intended for the lay press or lay audiences should give expression to the consensus of opinion of the medical profession rather than to personal views and such articles should appear under the auspices of the American Medical Association or of the constituent state association or of one of the component county societies.

It is suggested that the Council on Medical Education devote more attention to the problems of the supply of physicians and the question of medical care in rural districts. The reference committee considered it necessary that the present curriculum be reduced materially and that special attention be given to the training of general practitioners.

In considering the question of contract practice it is recognized that both ethical and unethical contracts are possible and that individual cases must be judged on their merits.

Constituent state associations are requested to take action to promote an amendment to the income tax law giving the individual the right to deduct from the income tax the expense of medical and surgical treatment for himself and family.

It was recommended that the American Medical Association give support in the work of the committee on grading of nursing schools and share in its financial program, and the sum of five thousand dollars was appropriated for one year toward this end.

The committee on a Physicians' Home was convinced that the need for a national home is not sufficient to warrant the American Medical Association in establishing, managing and sustaining a home. The Secretary A. M. A. was requested to obtain full information from the various states and cities as to what is now being done for the aged and indigent physicians in the communities, so that other state or component societies may take measures to afford relief for dependent worthy physicians, their widows and orphans who may need aid.

The House of Delegates went on record in favor of the Ransdell bill appropriating $10,000,000 to establish a national institute of health under the control of the Surgeon General of the Public Health Service. The House also reaffirmed its favorable action of 1922, requesting the passage of the Bursum bill which relates to the retirement of emergency army medical officers on a parity with all other classes of disabled officers of the World War now on the retired list.

In the much discussed matter of medicinal liquor it was recommended "that the special committee on alcoholic liquors be continued and be directed to cooperate in preparing a bill to be presented to Congress correcting the unfortunate provision of the Volstead Act limiting the amount of alcohol used, and providing such regulations as will permit doctors to prescribe whatever amounts of alcoholic liquors may be needed for their patients, and subject to such reasonable restriction as may be thought wise and best after a conference with the head of the Prohibition Department.

It was also urged that the American Medical Association declare its adherence to the principle that legislative bodies composed of laymen should not enact restrictive laws regulating the administration of any therapeutic agent by physicians legally qualified to practice medicine.

A resolution asking the Board of Trustees to prepare approved forms of letters or literature which may be sent out by county medical societies to the public to promote the value of periodic health examinations and information that the examinations can be made and records kept by qualified physicians who are members of the American Medical Association, in this manner helping to circumvent the harmful advertising activities of commercial agencies dealing with periodic health examinations, was endorsed by the reference committee and adopted by the House of Delegates."

LEONARD WOOD—PHYSICIAN, SOLDIER, STATESMAN

Born in Winchester, N. H., 1860; educated at Harvard university and medical school from which he graduated in 1884; house surgeon Boston City hospital, one year; assistant contract surgeon in the Army, 1885-1891, with General Miles in Arizona, also commander of an infantry detachment and a scouting party with the Lawton expedition against Geronimo; a capacity for endurance and reckless contempt of danger, his ability as a fighter and his qualifications as a commander were recognized when during the first few months of service, he captured Geronimo with most of his followers; promoted to captain, he was post surgeon at a number of points, notably the Presidio, San Francisco; personal physician to President Cleveland and President McKinley; colonel in command of the Rough Riders he directed the victories at San Juan hill and Guasimas for which he was promoted to brigadier general of volunteers; military governor of Santiago and civil governor of Cuba with the rank of major general; nominated by President Roosevelt, general officer in the regular army; governor of Moro province in the Philippines; official observer of European army maneuvers; from 1908 to 1910 commander of the Eastern Department, special envoy to Argentine in 1910; first chief of staff of the Army; originator of civilian training camps and the "Plattsburg idea", perhaps the most potent influence in our preparation for the war; commander of the 89th Division at Camp Funston; sent to France on an inspection tour of the battle front but never assigned to command troops overseas; candidate for the Republican nomination for president in the convention that became deadlocked which finally resulted in the nomination of Harding; elected provost of the University of Pennsylvania, a post he was never to fill, for President Harding appointed him governor-general of the Philippines which post he held at the time of his death.

Death came following an operation on his skull at the Peter Bent Brigham hospital, Boston, August 7, 1927, and his remains were interred at Arlington cemetery.

Leonard Wood, Physician, Soldier, Statesman, Diplomat—the medical profession is greatly honored that you have lived!

SUPPLY OF PHYSICIANS

In the Preliminary Report of the Commission on Medical Education we read that there are 61 schools in the United States that are producing 95 per cent of our graduates of medicine and that it is clearly incumbent upon these schools to bear in mind the probable future health needs of the country and the role which medical practice is likely to play in meeting these needs.

The task of supplying sufficient numbers of well-trained physicians to meet the demand of the future is one that must be allotted to our medical educational institutions. As yet there is no serious lack of physicians. The problem just now is one of distribution. There are at present approximately 147,000 practicing physicians in the United States of whom about 1800 are over 65 years of ago. It is estimated that 5 to 7 per cent of all graduates do not practice medicine. They go into insurance, the missionary field, into laboratories, the army and navy and kindred fields of activities.

We read in *American Mercury*, June, 1927, the statements of Pusey that almost one-third of the small towns of the United States have lost their doctors in the past eleven years and that these vacancies have not been filled. Pusey says: "These findings are ominous; they indicate a rapid and dangerous disappearance of country doctors". He predicts an absolute breakdown of rural practice by 1935—a prediction based on the fact that the average age of the country doctors is 52 years and the average age at death of American physicians is 62. To add further emphasis to his argument Pusey says: "The doctors upon whom the rural districts are chiefly dependent for medical service are a group of old men who are getting toward their end, with nobody in sight to take their places''. In the past ten years only 1.4 per cent of the graduates of our medical schools located in rural districts and this according to Pusey, means that in ten years from now there will be something less than three doctors per rural counties in the United States whereas today there are an average of 15.5 doctors in rural counties.

Clearly there is need for a remedy while there is yet time to prevent the breakdown of rural practice. According to Pusey and a host of other men who are thinking seriously of this problem, the remedy lies in the creation of more medical schools and a less expensive medical training. This does not imply a lowering of standards as applied to essentials, but rather the elimination of requirements in the irrelevant subjects of the premedical years and the abridgement of the courses that have to do with the so-called specialties in the clinical years. President Pritchett of the Carnegie Foundation is quoted as saying—"it is clearly impossible to solve the problem of medical education in the U. S. by building up a small number of richly endowed and equipped schools." There is need for more widely distributed small schools. If this were done the cost of medical education would be reduced to the student and we would have more graduates to locate in rural districts. Pusey says "almost no country boys are going to medical schools today" because the burden is too great for their limited resources, and he quotes President Butler of Columbia who says—"We are turning out now 'the country club type' and the actual country has nothing to offer them".

—Palmer Findley.

MATERNAL MORTALITY IN NEBRASKA

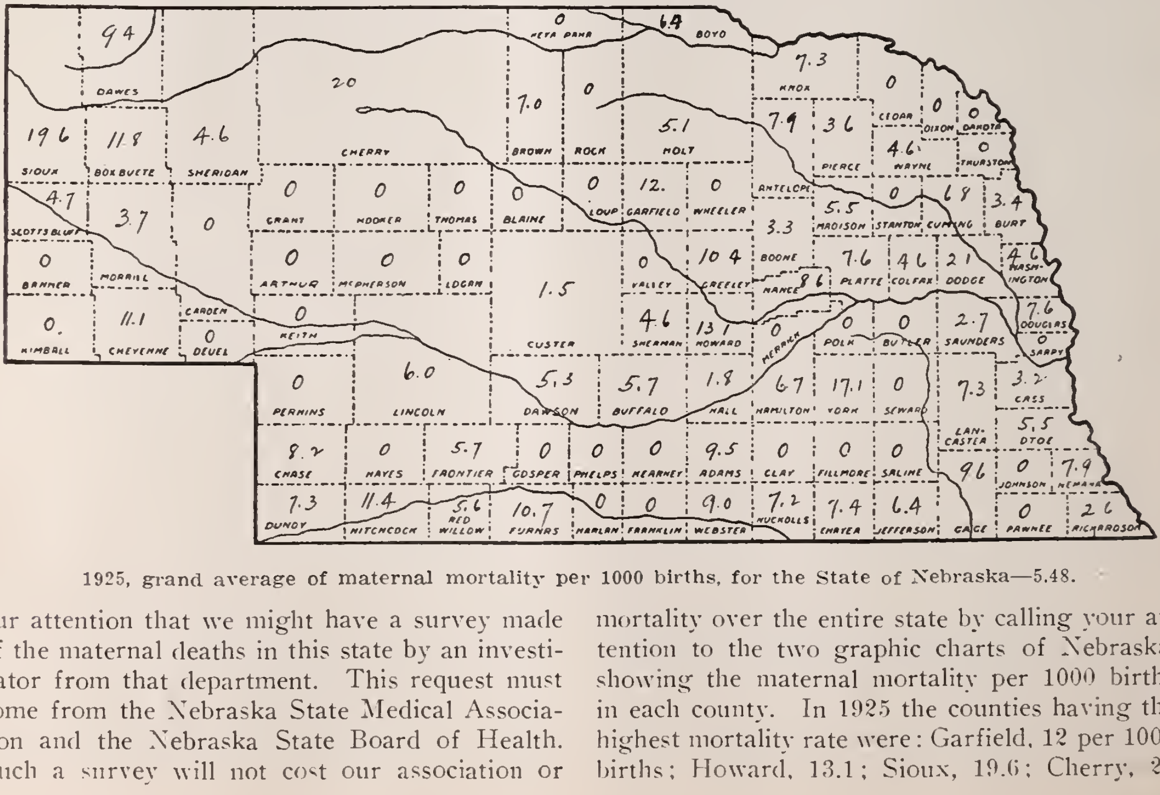
The recent visit of Dr. Blanche M. Haines, Director of the Division of Maternity and Infant Hygiene: U. S. Department of Labor, Children's Bureau, Washington, D. C., brought to our attention that we might have a survey made of the maternal deaths in this state by an investigator from that department. This request must come from the Nebraska State Medical Association and the Nebraska State Board of Health. Such a survey will not cost our association or Health Department a penny, as funds are supplied by the Children's Bureau. At present four states have already requested an investigation of maternal mortality: they are, Virginia, Kentucky, Michigan and Maryland. A study of Nebraska statistics would interest many physicians, especially in comparing a mid-western state with southern and eastern states.

Dr. Haines made addresses both in Omaha and Lincoln and assured us that she could send a field worker to this state if a request be made.

In view of the fact that our maternal mortality has increased from 5.48 per 1000 births in 1925 to 6.32 per 1000 births in 1926, it seems only logical that we should immediately accept such an offer in the endeavor to ascertain the cause of this increase. We may not have the Maternal and Infant Division in the Children's Bureau after 1929, and when such assistance is offered at no cost to us, why should we not take advantage of the opportunity.

There were 29,179 births in Nebraska in 1925 with 160 maternal deaths; and 28,287 births in 1926 with 179 maternal deaths. This means less children born, with more mothers sacrificed. And we ask why does this condition exist? Such a survey may be able to shed some light on the question. In other words, we have everything to gain and nothing to lose.

I can best give you an idea of the maternal mortality over the entire state by calling your attention to the two graphic charts of Nebraska, showing the maternal mortality per 1000 births in each county. In 1925 the counties having the highest mortality rate were: Garfield, 12 per 1000 births; Howard, 13.1; Sioux, 19.6; Cherry, 20

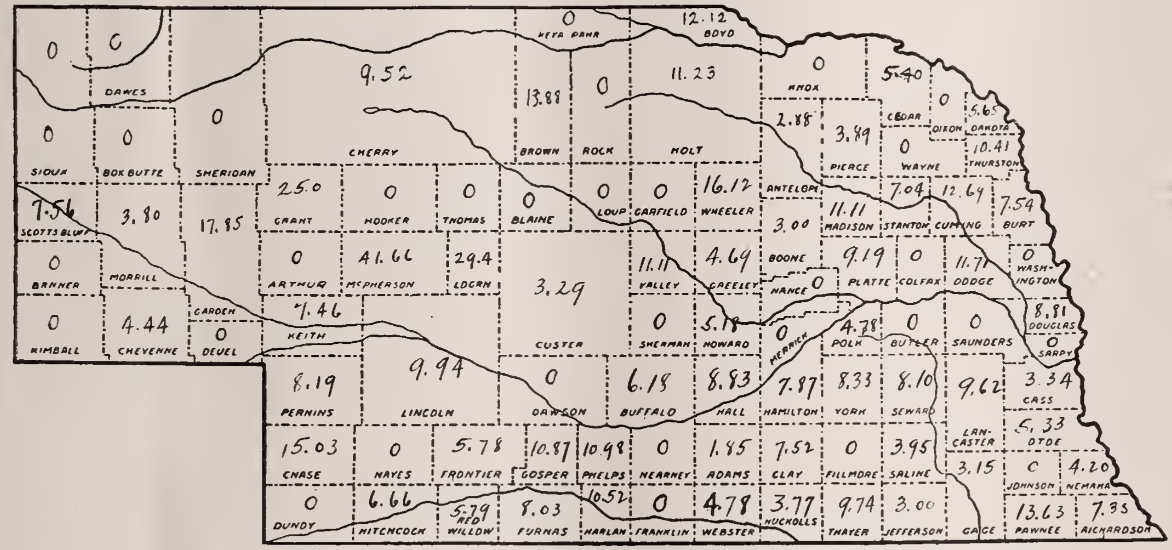


1925, grand average of maternal mortality per 1000 births, for the State of Nebraska—5.48.

per 1000 births. In 1926 there were 10 counties with a maternal mortality of over 12 per 1000 births; the four highest being Garden, 17.85; Grant, 25; Logan, 29.41; and McPherson with 41.66 per 1000 births. These high rates are accounted for by the fact that in Garden county there were 2 deaths in 112 deliveries; in Grant, 1 maternal death in 40 deliveries; in Logan, 1 maternal death in 34 deliveries; in McPherson county, 1 maternal death in 24 deliveries.

It should be remembered, however, that the maternal death rate per 1000 deliveries in Nebraska (5.48 per 1000 in 1925 and 6.32 per 1000 in 1926), compares favorably with the figures for the United States as a whole, an average of 6 to 9 per 1000 births. In the past two years, over 1400 women in Nebraska have received one or more lessons in mothercraft through the Division of Child Hygiene. The first two lessons, "Health of the Mother and Babe" and "Prenatal Care and Infant Care", stress the need for every pregnant woman to be examined early by her physician, and to continue under his care and guidance during the entire nine months of gestation.

It is hoped that our Nebraska State Medical Society and State Board of Health will request the Children's Bureau in Washington to make a survey of Maternal deaths in Nebraska, and that the medical and nursing profession of Nebraska will co-operate to the fullest extent in helping to solve this problem. —Earl C. Sage.



1926, grand average of maternal mortality per 1000 births, for the State of Nebraska—6.32.

THE KAHN TEST

Since Michaelis discovered that colloidal precipitation may occur when syphilitic blood serum and alcoholic extracts of tissue are properly mixed, many tests for syphilis have been devised, based on this principle.

The Kahn test is the latest, most sensitive and most satisfactory of the group. It was first suggested by Dr. Kahn of the Michigan State Board of Health in 1922 and is now attracting quite wide spread attention. Dr. Kahn has substituted it for the Wassermann test in the Michigan State Laboratory and it has been adopted by the United States Navy.

The test consists in mixing a specially prepared alcoholic extract of heart muscle to which four-tenths of one per cent of cholesterol has been added, with a small amount of inactivated serum. This is incubated for fifteen minutes in a water bath, and five minutes at room temperature and the amount of colloidal precipitate observed.

In most laboratories, the test agrees with the Wassermann in abount ninety per cent of cases. The difficulties lie in standardizing the antigen, in reading the amount of precipitate, and in ruling out spontaneous flocculation. In the hands of experienced workers, these difficulties can be satisfactorily overcome, but the end point in the Wassermann is much more clear cut and hence more easily read. The Kahn test requires fresh, clear serum, free from red corpuscles, but the reagents, once prepared and standardized, are quite stable.

These characteristics make the method of peculiar interest to the Navy where it is difficult to maintain the reagents for the Wassermann on shipboard and in isolated naval stations, and where an experienced serologist is not always available.

The method will very probably prove a valuable adjunct to the Wassermann. Its use as a simple office test carried out by an untrained attendant is at any rate open to debate for several reasons, as has been pointed out by various writers. In the first place, the preparation and standardization of the antigen is difficult. Dr. Kahn suggests that a worker procure standard antigen for comparison, or that all antigen be sent to the Michigan State Laboratory for standardization. In the second place, it requires accurate pipetting of very small amounts of reagents and this necessitates constant practice. Small variations in the relative concentrations of serum and antigen seem to make marked differences in the results. In the third place, one must use absolutely clear, thin walled, glass tubes, free from scratches to get accurate results. An unskilled serologist is apt to overlook such fine details. In the fourth place, the borderline cases are often difficult to read and interpret.

Whether it is a specific test, due to the presence of specific bodies capable of being flocculated, is an open question. Whether it depends on the same serum factors as the Wassermann is not known. Whether there are substances or conditions which will cause flocculation in non-syphilitic serum or prevent flocculation in syphilitic serum is still not definitely proven.

In some cases, the Kahn test remains positive longer than does the Wassermann. The clinical significance of these reactions remains for experience to decide.

In conclusion, the method gives promise of becoming a valuable aid to clinical diagnosis, but in no sense should it be considered safe to use as a simple office test. If the Wassermann and the Kahn do not agree, it seems best, at present, to place more dependence in the Wassermann.

—John T. Myers.

EDITORIAL PARAGRAPHS

A Basic Science law was enacted by the Minnesota legislature this spring.

If a country doctor moves to a city, what is necessary, a readjustment or a metamorphosis?

The Clinical Congress of the American College of Surgeons will meet at Detroit, October 3-7.

There are about 200,000 nurses in the United States. About 13,000 nurses are graduated annually.

According to the A. M. A. Directory, Nebraska had 23 less physicians in January, 1927, than in January, 1925.

Census reports show that the death rate from all causes in 1924 was 11.8; in 1914 it was 13.6; in 1894 it was 16.5.

The Virginia Sterilization law was declared valid by the Supreme Court of the United States in an opinion delivered by Justice Holmes.

If we thought it would do any good, we would object to the lay press calling a physician who has been in practice twenty years, a pioneer.

The Inter-State Postgraduate Medical Assembly will this year convene at Kansas City, October 17-22, with two days of pre-assembly clinics in the Kansas City hospitals.

The coal tar ointment for eczema, the formula of Dr. Charles J. White, is of the following composition: Crude coal tar, zinc oxide, each, 2 grams; petrolatum 30 grams.

A joint meeting of the Montana, Idaho and Wyoming medical societies is to be held in Yellowstone Park in 1928. A few Nebraska physicians would attend if they were invited, wouldn't they?

Motion pictures of the growth of open cancer have been made in England by exposing an open cancer to a slow moving film for a period, up to two days. It is said that the cancer cells are seen moving, creeping, spreading.

An idea of the immensity of the activities of the annual meetings of the American Medical Association may be derived from the fact that more than three hundred papers were read before the sixteen sections at the recent Washington meeting.

An editorial in the *Boston Medical and Surgical Journal* based on the studies of Edith Boyd, *Am. J. Dis. Child*, June, 1927, says "that a diagnosis of death by status lymphaticus may not be a terrible one, because status lymphaticus is a purely imaginary condition".

With all this propaganda for more than a pint, it is really hard to believe that it is not inspired by a thirst. Dr. Chas. Wood Fassett, editor of the *Medical Herald*, expresses himself pretty plainly on the subject, "Whiskey and the Physician", in the July number.

The Division of Child Hygiene, State Bureau of Health, wishes to remind the profession that "Prenatal Letters", "Prenatal Care", "What Builds Babies", and "Minimum Standards of Prenatal Care", are publications for free distribution and to be had for the asking.

Press reports indicate that the village of Dubois, Wyo., 85 miles from a railroad and the neighboring village of Dunoir, 110 miles from a railroad have jointly made satisfactory arrangements with a Dr. E. B. Danerer to locate in the first named place and to serve the two communities.

An important medico-legal decision was handed down by the Nebraska Supreme court recently in the case of Daniels vs. Wolcott. The case hinged on the treatment of an injured wrist. The court held that a surgeon could not guarantee a cure, and gave a verdict in favor of Dr. W. E. Wolcott, former Omaha, now Des Moines, orthopedist.

Is phenolphthalein a systemic poison in any amount? Authorities say no constitutional effects follow its administration. It is eliminated by the colon and nominal amounts appear in the urine. Occasional reports of albuminuria following its administration have not been verified. The writer bumped right into this question when a two-year old child was brought to him with the statement that the child had eaten ten "Feenamint" lozenges.

It appears that the basic science law enacted by the last legislature has a supernumerary tooth. It was expected that the law would have a workable denture, but according to an opinion of Attorney General Spillman entrance of healers from other states by reciprocity can be carried on in the future only when the home state of the emigrating healer has a law similar to the Nebraska basic science law. Wisconsin, Minnesota and Washington are the only other states having a basic science law.

A home has been presented to Private John R. Kissinger, Huntington, Ind., who as a soldier in Cuba, 27 years ago, was one of the volunteers to be bitten by mosquitoes which had fed on fatal cases of yellow fever, while an army commission was investigating the transmission of yellow fever. Private Kissinger has been incapacitated for twenty years and is on the pension rolls at $100 per month. The home was provided by a citizens committee which sponsored a subscription for the purpose.

The New Haven Health Department has made a preliminary study of the bacteriology of tooth brushes with the result that some of us have long suspected: Brushes used in mouths where teeth were good had a low bacterial count, while where teeth were dirty or had cavities the bacterial count was 100 times as high. Dentifrices had an effect on the bacterial count as did also the use of hot water to rinse the brush after using. The bacterial count did not increase, but decreased, on standing as much as nine hours.

Reference was made in the last number to the new Department of Health at the State Fair. The committee has worked hard and it is believed will be able to make a creditable showing. Members of the State Medical association should make a special effort to attend this year and bring their friends. All the details have not yet been worked out, but it is felt that organized medicine will be well pleased and that much good will be done. Let us hope that the doctors of the state will show enough interest to help make it a success.

MISSOURI VALLEY MEDICAL SOCIETY

Des Moines, September 14-16

The annual meeting of the Missouri Valley Medical Association will be held at Des Moines, September 14, 15 and 16. All who attended the Omaha-Council Bluffs meeting of this association last year were loud in their praises of the program. A program of equal, if not greater, value has been provided for the Des Moines session.

Members from the faculties of the universities of the district are cooperating in sending the best that they have to these meetings. Over half the program will be given by men from the faculties of Iowa, Kansas, Nebraska, Creighton, St. Louis and Washington Universities.

The following guests will appear on the program: W. T. Bovie, M. D., Professor of Biophysics, Harvard University; A. J. Carlson, Ph. D., M. D., Professor of Physiology, University of Chicago; George B. Eusterman, M. D., of the Mayo Clinic, Rochester; Herman L. Kretschmer, M. D., Professor of Urology, Rush Medical College; Lewis J. Pollock, M. D., Professor of Neurology and Psychiatry, Northwestern University; Oscar M. Gilbert, Associate Professor of Medicine, University of Colorado.

There will be an ample number of clinics. In addition material of interest will be presented by selected members of the association. It has been the policy of the program committee to select the men and work to be presented and not to send out general requests for papers. Only in this way has the committee felt that the high standard of the programs of the last two years can be maintained.

Following is the preliminary program for the meeting:

September 14, 1927

Morning Session

9:30—"Recent Developments in Muscle Physiology", H. W. Dahl, M. D., Des Moines, Iowa.

10:00—"Clinical Signs of Peripheral Nerve Injury", Lewis J. Pollock, M. D., Professor and Chairman of the Division of Neurology and Psychiatry, Northwestern University College of Medicine, Chicago, Illinois.

10:30—"Recent Developments in Pernicious Anemia", Walter L. Bierring, M. D., Des Moines, Iowa.

11:00—"Facts and Fancies on Present Day Organotherapy". A. J. Carlson, Ph. D., M. D., Professor of

Physiology, University of Chicago College of Medicine, Chicago, Illinois.

Afternoon Session

2:00—Clinic, Lewis J. Pollock, M. D., Professor and Chairman of the Division of Neurology and Psychiatry, Northwestern University College of Medicine, Chicago, Illinois.

3:00—"Granuloma Coccidioides With Report of a Case", C. C. Tomlinson, M. D., Assistant Professor of Dermatology and Syphilology, University of Nebraska College of Medicine, and Paul Bancroft, B. Sc., Fellow Department of Pathology, University of Nebraska College of Medicine, Omaha, Nebraska.

3:30—"Study of a Case of Nephritis", A. D. Dunn, M. D., Director of Department of Experimental Medicine, University of Nebraska College of Medicine, Omaha, Nebraska.

4:00—"Foreign Bodies in the Oesophagus and Respiratory Passages", Bernard M. Kully, M. D., Instructor in Otorhinolaryngology and Anatomy, Creighton University College of Medicine, Omaha, Nebraska.

4:30—"Surgical Treatment of Carcinoma of the Breast and Acute Gangrenous Perforated Appendicitis", Illustrated by Motion Pictures, Caryl Potter, M. D., St. Joseph, Missouri.

Evening Session

8:15—"How We Learned to See and How We Have Planned Some Other Things" (by request), W. T. Bovie, M. D., Professor of Biophysics, Harvard University, College of Medicine, Boston, Massachusetts.

9:30—"Tigers", Lantern Slide Talk on Big Game Hunting in Indo-China and India, Richard L. Sutton, M. D., Professor of Dermatology, University of Kansas College of Medicine, Kansas City, Kansas.

September 15, 1927

Morning Session

9:00—"The Problem of Ureteral Obstruction", Nelse F. Ockerblad, M. D., Associate Professor of Clinical Urology, University of Kansas College of Medicine, Kansas City, Kansas.

9:30—"Consideration of Some Border-line Problems in Urology", Herman L. Kretschmer, M. D., Professor of Urology, Rush Medical College, Chicago, Illinois.

10:00—"The Diagnosis and Modern Treatment of Trigeminal Neuralgia Major", William T. Coughlin, M. D., Professor of Surgery and Director of Department, University of St. Louis School of Medicine, Kansas City, Kansas.

10:30—"Etiology and Mechanism and Treatment of Hypertension, Ralph H. Major, M. D., Professor of Medicine, University of Kansas College of Medicine, Kansas City, Kansas.

11:00—"Some Fundamental Principles of Radiation Therapy", W. T. Bovie, M. D., Professor of Biophysics, Harvard University, College of Medicine, Boston, Massachusetts.

Afternoon Session

2:00—Clinic, Herman L. Kretschmer, M. D., Professor of Urology, Rush Medical College, Chicago, Illinois.

3:00—"Perverted Physiology as a Factor in Diagnosis of Disease of the Biliary Tract", C. C. Nesselrode, M. D., Associate Professor of Surgery, University of Kansas College of Medicine, Kansas City, Kansas.

3:30—"Some Observations on the Treatment of Pernicious Anemia", A. P. Munsch, M. D., St. Louis, Missouri.

4:00—Clinic, William T. Coughlin, M. D., Professor of Surgery and Director of Department, University of St. Louis School of Medicine, St. Louis, Missouri.

Evening Session

6:30—Dinner. Presidential Address—"Salt in Medicine", Thomas G. Orr, M. D., Professor and Head of Department of Surgery, University of Kansas College of Medicine, Kansas City, Kansas.

Friday, September 16

Morning Session

9:00—"Hopeful Aspects of the Study of Cancer", David P. Barr, M. D., Professor of Medicine, Washington University College of Medicine, St. Louis, Missouri

9:30—"High Lights of Gastro-enterologic Progress", George B. Eusterman, M. D., The Mayo Clinic, Rochester, Minnesota.

10:00—"Foreign Protein Treatment in Obstetrics and Gynecology", E. D. Plass, M. D., Professor and Head of Department of Gynecology and Obstetrics, University of Iowa College of Medicine, Iowa City, Iowa.

10:30—"The Duties of Practitioner in Prevention of Spinal Deformities", Arthur Steindler, M. D., Professor and Head of Department of Orthopedics, University of Iowa College of Medicine, Iowa City, Iowa.

11:00—"Atypical Chronic Glomerulor Nephritis", Fred A. Smith, M. D., Professor and Head of Department of Theory and Practice of Medicine, University of Iowa, College of Medicine, Iowa City, Iowa.

11:30—"Observations on the Arrest of Dental Caries in Children", J. D. Boyd, M. D., Professor of Pediatrics, University of Iowa College of Medicine, Iowa City, Iowa.

Afternoon Session

1:30—Clinic, George B. Eusterman, M. D., The Mayo Clinic, Rochester, Minnesota.

2:30—(Title unannounced), Donald Macrae, M. D., Council Bluffs, Iowa.

3:00—"Practical Application of Forceps", Illustrated on the Manikin, F. B. Langdon, M. D., Des Moines, Iowa.

3:30—"The Control of Ciliary Activities With Clinical Implication", James F. McDonald, M. D., Professor of Anatomy, Creighton University College of Medicine, Omaha, Nebraska.

4:00—"Progress in the Treatment of Tuberculosis", Oscar Monroe Gilbert, M. D., Associate Professor of Medicine, University of Colorado College of Medicine, Boulder, Colorado.

ENSWORTH-CENTRAL MEDICAL COLLEGE ALUMNI ASSOCIATION

The third annual meeting and dinner of this association will be held in St. Joseph (exact date announced later) during the Clinical Week in Kansas City. The Interstate Post-Graduate Medical Society of North America and the Kansas City Clinical Society will hold a joint conference at the Shrine Temple, Kansas City, Missouri, October 17 to 21. The secretary is very anxious to have a much larger attendance than last year, and for this reason is anxious to have enrolled all of the graduates of Northwestern, Ensworth-Central Medical Colleges. We should have an attendance of 300 at the next meeting. The professors in the three colleges are eligible to membership and urged to attend. The dues are only $1.00 per year, including the Medical Herald, which contains all the news of the association. All graduates are urged to send their names to Charles Geiger, M. D., president, St. Joseph, Missouri; or Charles Wood Fassett, M. D., secretary, 115 East 31st St., Kansas City, Mo.

THE SOCIETIES

The July meeting of the **Madison "Four Counties" Medical Society** was held at Orchard, Antelope county, on the evening of the 19th, sponsored by the Doctors Fletcher. Eighty-five physicians and dentists and their wives enjoyed the dinner which preceded the scientific program—a record number for attendance at these meetings.

Dr. W. G. Rowntree of Sioux City gave an address on "The Future of Medicine", which was much appreciated.

Dr. W. H. Plummer of the Mayo clinic read a paper on "Early Diagnosis of Disease of the Thyroid", stressing the symptomatology and differential diagnosis of exophthalmic and adenomatous goiters. He seemed to feel that the basal metabolic rate was of little value since some high rates were found with little evidence of goiter and vice versa. The exophthalmic may have remissions, while the adenomatous is more constant and the rate does not run so high. The secretion in the exophthalmic is perverted—a change in the thyroxin, while the adenomatous goiter produces an over-abundance of normal thyroxin. The principal symptoms of the exophthalmic goiter are emotional instability; increase in appetite and in weight; feeling of warmth to the extent that when abed the feet are pushed beyond the covers to cool them; the eye signs, first a frequent winking before widening of the palpebral fissure; the cardio-vascular signs, a bruit heard at the superior thyroid vessels in 80% of cases, a carotid bruit increased in intensity on approach to the clavicle, and is systolic, while a venous bruit is a constant roar. The blood pressure is high with pulse pressure approaching 70. Under forty excludes the disease. Exophthalmic goiter with toxicity is the commonest cause of auricular fibrillation. The restlessness of exophthalmic goiter disappears readily on the exhibition of Lugol's solution. Since restlessness is not found in adenomatous goiter, Lugol's solution is not indicated. Adenomatous goiter usually consists of small nodules in the thyroid; but may be large enough in one lobe to displace the larynx and this should be borne in mind while examining. Examiner should stand in front of patient pushing the larynx to the left with right thumb, then grasping the lobe with thumb and middle finger of the left hand. As patient swallows thyroid raises up and can be held.

The Elkhorn Valley Medical Society annual meeting was held at Norfolk, August 3, afternoon and evening. One of the outstanding programs in the history of the society was presented to an attendance numerically below the average.

A get-together luncheon at the Hotel Norfolk and the business meeting preceded the scientific sessions. Dr. A. E. Cook, Randolph, was elected president for the ensuing year, Dr. A. N. Howley, Norfolk, and Dr. H. W. Francis, Bancroft, vice president and Dr. E. L. Brush was re-elected secretary-treasurer.

Drs. Salter and Brush gave a bone clinic at the Norfolk General hospital, presenting fifteen cases, showing end results in cases requiring open operative treatment. One case of fracture of the head of the humerus in which fixation with a ten-penny nail was done showed a perfect result and the nail in situ thirteen years after the injury.

At the Lutheran hospital Dr. A. N. Howley showed an interesting eye case, the result of an auto accident, and Dr. F. A. Pollack exhibited a number of interesting x-ray plates. The staff of the Norfolk State hospital gave as a clinic a further report on the 16 cases of paresis, reported last year under treatment by malarial infection. Tabulated the report showed 19% cured, 40% progress arrested, 9% relapsed, 6% no improvement, 13% under treatment, 13% died—a remarkably favorable showing in a heretofore supposed incurable disease.

The evening session followed a dinner at the hotel. Dr. A. E. Cook, Randolph, read a paper on "The Country Doctor", and Dr. J. E. Summers, Omaha, gave a paper on "Clinical Significance of Modifications of Pulse and Temperature".

The **Otoe County Medical Society** met August 8th over a 6:30 p. m. dinner at the Frontier hotel, Nebraska City. The scientific program consisted of a symposium on gallbladder disease and was presented by Dr. T. J. Dwyer, Dr. W. N. Anderson, Dr. James Kelley and Dr. F. W. Neihaus, all of Omaha.

HUMAN INTEREST TALES

Dr. G. I. Reeves has moved from Philips to Belgrade.

Dr. and Mrs. W. H. Taylor, Omaha, have returned from Europe.

Dr. and Mrs. C. G. Moore, Fremont, visited in Indiana in July.

Dr. Clarence Emerson, Lincoln, has returned from European clinics.

Dr. J. E. Pulver was at the Minnesota lakes during his vacation period.

Dr. Chester F. Johnson, formerly of Omaha, has located at San Diego.

Dr. and Mrs. E. L. Bridges spent the month of August in California.

Dr. Margaret Hammond, Lincoln, visited in Kansas and Oklahoma in July.

Dr. W. F. Finley, O'Neill, made a trip to Prairie du Chien, Wis., in July.

Dr. A. T. Rice, Beatrice, celebrated his 92nd birthday anniversary July 27th.

Dr. and Mrs. F. W. Scott, Omaha, motored to Duluth and Winnepeg in July.

Dr. and Mrs. R. G. Cressman, Hastings, spent their vacation period in Colorado.

Dr. and Mrs. E. L. MacQuiddy, Omaha, spent their vacation at Long Lake, Minn.

The Doctor A. F. Jonas family, Omaha, spent the summer at Lake Mendota, Wis

Dr. and Mrs. B. C. Russum, Omaha, spent a vacation along the Minnesota Lakes.

Dr. and Mrs. W. L. Albin, Lincoln, have returned from a three month's trip abroad.

Dr. T. J. Kerr, North Platte, went on a lion hunt in southern Utah early in August.

Dr. and Mrs. E. V. Wiedman, Lincoln, spent their vacation at Greeley and Estes Park, Colo.

Dr. and Mrs. Z. L. Kay, McCook, celebrated their golden wedding anniversary, July 15.

Dr. F. J. Wearne, Omaha, spent his vacation in the country about Prince Rupert, Canada.

Dr. and Mrs. G. Alexander Young, Omaha, spent the month of August at La Jolla, Calif.

Dr. and Mrs. A. A. Smith, Hastings, spent their vacation at Medicine Bow Lodge, Wyo.

Dr. F. J. Murray and family, Benson, enjoyed an outing at Otter Tail, Minn., a month ago.

Dr. G. E. McDonald, health officer of Long Beach, Calif., visited relatives at Pierce, in July.

Dr. and Mrs. J. A. Borghoff and children, Omaha, spent the summer vacation at Lake Okoboji.

The marriage of Dr. Robert M. Lee, Ravenna, and Miss Elizabeth Moore, Hastings, is announced.

Dr. J. D. McCarthy, for a number of years in practice at Elgin, left for a year's study in Europe.

Dr. R. V. Witter, Bayard, after a visit to Chicago and Rochester clinics, has resumed his practice.

Dr. and Mrs. F. S. Morris, McCool Junction, have returned from a month's trip to California points.

Dr. H. L. Starkey, Wood River, was seriously injured in an auto collision the first part of August.

The opening of a very creditable hospital recently built by Dr. F. A. Brewster, Holdrege, is announced.

The Drs. Albert E. and Nettie Gerrish, Omaha, spent their vacation attending the Mayo clinic in July.

Dr. and Mrs. William Windle Davis, Omaha, spent a part of the summer at Big Balsam camp, Minnesota.

Dr. and Mrs. I. C. Munger, Lincoln, made a circle trip to points in southern and northern Iowa last month.

Dr. Joel Anderson, formerly of Gothenburg, has become associated with Dr. E. W. Fetter, North Platte.

Dr. Harry Mantor, Sidney, has been appointed deputy custodian of the Masonic grand lodge of Nebraska.

Dr. and Mrs. Clarence Emerson, Lincoln, have returned from a four months study and pleasure trip abroad.

Dr. Claude Selby and family, North Platte, visited the former's parents in Los Angeles in July and August.

Dr. and Mrs. A. P. Ginn, Nebraska City, made an extended trip to the Middle and New England States in August.

Dr. and Mrs. A. E. Gadbois, Norfolk, spent several weeks in Denver where the doctor took special work on the eye.

Dr. Charles McMartin, Omaha, left early in August for a trip to Long Beach and other southern California points.

Dr. E. E. Linn has become affiliated with the Grand Island clinic as head of the eye, ear, nose and throat department.

Dr. J. J. Kiefer, West Point, journeyed to San Francisco to attend the wedding of his son the latter part of July.

Dr. and Mrs. A. R. Knode, Omaha, motored to the Black Hills and through Yellowstone Park during mid-summer.

Formation of the Norfolk clinic is announced. Drs. A. E. Gadbois, C. E. Sayre and Dr. Lucien Stark are the principals.

Dr. and Mrs. S. P. Wallin, Snyder, visited in Illinois and the Doctor also attended Clinics at Rochester, Minn., in August.

Dr. and Mrs. W. F. Callfas, Omaha, have returned from a motor and camping trip to the Ice Box canyon in the Black Hills.

Dr. C. W. Thomas, formerly of Barneston, has moved to Wymore and has become division surgeon for the Burlington lines.

Dr. and Mrs. J. Stanley Welch, Lincoln, have returned from a trip around the globe, and a period of postgraduate study in Vienna.

It is announced that Dr. A. H. Farnsworth, Grand Island surgeon, is about to retire from the Grand Island clinic owing to ill health.

Dr. E. E. McClelland, formerly of Omaha, has purchased the equipment of Dr. J. D. McCarthy, at Elgin, and will succeed him in practice.

Dr. Harold S. Morgan, Lincoln product, has been appointed an instructor in the medical school of the University of Michigan at Ann Arbor.

Dr. Irwin Thompson and family, West Point, made a motor trip to the Black Hills, Yellowstone park and other inter-mountain points in August.

Dr. J. B. Babcock, Hastings State hospital physician, after an enforced vacation of three months due to an auto accident, has resumed his work.

Dr. P. H. Salter and son, George, Norfolk, motored to Winnepeg in August to visit the former's cousin, who is lieutenant governor of the Province.

Dr. D. E. Haworth, former division surgeon for the Burlington, has been given charge of the Beardstown (Ill.) division and has moved to the latter place.

Dr. D. G. Griffith, superintendent of the Lincoln State hospital, spoke to Nebraska City Rotarians, August 3, on methods of treatment for the insane.

Your secretary-treasurer, Dr. R. B. Adams, Lincoln, spent the month of August in the Canadian north woods more than a hundred miles from civilization.

Dr. A. A Bald and family, Platte Center, spent a month viewing the wonders of Yellowstone and Glacier National parks, returning the second week in August.

Dr. F. W. Woeppel, Wahoo, was seriously injured in an auto accident near Yutan, recently. Several ribs were fractured and bad cuts about the head and face were suffered.

Dr. J. V. Beghtol, veteran Hastings physician, spent a month recently looking in at the Mayo clinic, fishing in the Minnesota lakes and on a boat trip from Duluth to Buffalo.

Mrs. Maude Peters, relict of the late Dr. W. R. Peters, Stanton, was elected head of the Women's Auxiliary of the Nebraska American Legion, at the recent annual convention.

Dr. O. F. Lang, Falls City, reserve officer of the regular army, was accorded the privilege of an airplane flight from Omaha to Los Angeles in a U. S. Mail plane, a month ago.

The veteran, Dr. G. A. Langstaff, for 27 years a practicing physician at Blair, has not only retired from practice, but has moved to Winnepeg, to assist his daughter to care for a family of orphaned children.

Dr. M. G. Wohl has associated himself in the practice of clinical pathology with Dr. F. W. Niehaus, pathologist to the Clarkson and St. Catherine's hospitals; and Dr. A. S. Rubnitz, pathologist to the Wise Memorial hospital, of Omaha.

A heartrending motoring accident occurred to Dr. W. E. Shike, Gering, while motoring near Crested Butte, Colorado, early in August, by which both lower limbs were fractured, one compound, and several ribs broken. It appears that the car went over a cliff 250 feet, landing in a stream bed and that the doctor and his companion, a Denver physician, were pinned under the car, and in the water, where they lay all night before rescued.

NECROLOGY

H. J. White, Ainsworth, Nebr.; College of Physicians and Surgeons, Keokuk, 1885; former member Nebraska State Medical Association; practicing physician in north Nebraska for forty years, at Long Pine, Valentine, Bassett, Springview, and for the last 18 years at Ainsworth; a member of the lower house of the Nebraska Legislature about 1918; a man known for universal kindness and consideration for others; died August 12, 1927, of an organic heart disease, aged about seventy-three years.

D. D. Raber, Lead, S. D.; Creighton University College of Medicine, 1907; formerly in practice at Omaha and Tilden, Nebr.; (and a member of the Nebraska State Medical Association), but the last few years at Nemo, Rapid City, and lately, on the staff of the Homestake hospital, Lead, S. D., died in the latter institution August 4th, 1927, aged about forty-two years.

O. L. Barton, Loomis, Calif.; Medical College of Ohio, 1879; practitioner at Central City, Nebr., for several years from 1879 to the early eighties; but for many years a resident of California; died July 14, 1927, aged about sixty-eight years.

Francis L. Kahn, recent graduate, Creighton University, College of Medicine, died in an Omaha hospital, August 6, 1927, aged 31. Dr. Kahn's parents live at Waseka, Minn., and the remains were taken to that place for internment.

BOOKS RECEIVED

Practical Lectures on the Specialties of Medicine and Surgery, Medical Society of the County of Kings, Brooklyn. Second Series. 590 pps. 140 illustrations. Price $7.00. Paul B. Hoeber, Inc., New York.

Lectures on Internal Medicine by Knud Faber, M. D., Professor of Internal Medicine, University of Copenhagen. 147 pps., 43 illustrations. Price $3.00. Paul B. Hoeber, Inc., New York.

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OBSTETRICAL MORBIDITY IN RURAL PRACTICE—ANALYSIS OF 717 PREGNANCIES*

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Statistical information is recognized as frequently being misleading, unless applied to a very large series of observations. Inaccuracy, however, of such information increases with the number of experiences analysed, because, if from a clinic, they do not present the observations of one individual; if from the bureau of vital statistics, records and observations are inaccurate and incomplete. Should the observations be those of some one practicing a specialty, they are apt to be distorted by the inclusion of referred work. While this series is small, it represents fairly completely the reproductive history of a typical cross section of society through a period of slightly over six years. In private practice in a rural community, the attending physician is able to know personally almost every detail in connection with the reproductive history of his clientele. An analysis of the social history of a large number of women should theoretically give parallel information, but because of reticence and timidity such histories tend to be incomplete, particularly in reference to early miscarriage.

In a review of the literature, we find very little to indicate what proportion of the total number of pregnancies reach their fulfilment in the production of a living child. We will make no attempt to give a comprehensive survey of this literature. When we have quoted from other sources, it has been for the purpose of comparison only. The case histories analysed are from our office files. Seventy-five per cent of these are the observations of one of us and all cases not belonging within our clientele have been excluded. In analysing this series of 717 pregnancies we have classsified the entire number to determine at what time pregnancy terminated, and with what result. The total number then fell into two groups, one in which pregnancy did not reach a viable age, the other in which a potentially viable child was delivered. The group in which pregnancy did not reach a viable age is then classified to determine the cause of premature termination. In the group of 566 cases in which pregnancy reached the 30th week, we have tabulated the complications of pregnancy, those of labor and of the puerperal stage. Finally we have tabulated the causes of still births and premature deaths.

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*Read before the Nebraska State Medical Association, annual meeting, Lincoln, May 10-12, 1927.

TABLE 1
PERIOD AT WHICH PREGNANCY TERMINATED

		Per Cent
Before 20th week	128	18 —
20th to 30th week	23	3 +
Before reaching viable age	151	21 —
At viable age	566	79 +
Live Births	549	76.7
Still Births	17	2.37
Child not surviving lying-in period	12	1.63
Total number pregnancies	717	100 %

In Table No. 1 then we notice that slightly more than one out of every five pregnancies terminated before reaching a viable age and of the total number of pregnancies occurring, three out of four net a live child after the lying-in--period. Approximately 20% being terminated before the 30th week, 2.8% being still born and 2.1% not surviving the lying-in-period.

TABLE NO. 1A
PERIOD AT WHICH PREGNANCY TERMINATED

Before 20th week	56	17.1+
20th to 30th week	9	2.7+
Before reaching viable age	65	19.9
At viable age	262	80.1
Live Births	252	77.3
Still Births	9	2.75
Child not surviving lying-in period	4	1.22
Total number of pregnancies	327	100 %
Prenatal care	220	67 %
Of entire group	717	63 %

In Table No. 1-A, we have the control group of 175 women, whose pregnancy histories can be given over a period of four to six years, the total number of pregnancies being 327. Approximately 20% of these, as in the entire group, were terminated before the foetus reached a viable age and in this group also approximately three out of four pregnancies produced a live child at the end of the lying-in-period. They differ only in the occurrence of a slightly larger percentage of still births, 3.43%, while only 1.52% live born did not survive the lying-in-period. We have made this compilation as a check on the entire group and believe that it justifies us in assuming that our figures for the entire group are reliable.

Herman Swartz(1), New York City, from the social histories of 10,000 families concluded that 8.07 miscarriages occurred to every 100 live births. J. Edwin Watson(2) concluded that 210 abortions occurred to every 1089 births or approximately 16.2% of the total number of pregnancies terminated as miscarriages. In the Maternal Mortality(3) statistics for Baltimore 1915, the total number of miscarriages under seven months was reported as 3.57%. Such figures, we feel, are entirely too low for the total number of pregnancies terminating before the seventh month. One can readily see that it would be extremely difficult to secure complete and reliable information concerning the ratio of miscarriages to the total number of pregnancies.

TABLE NO. 2
CAUSES OF TERMINATION OF PREGNANCY

Before 30th week	151	100
Epidemic or systemic infection	14	10.7
Foetal death due to toxemia and therapeutic inductions	23	15.5—3.2% of 717
Pathology of Pelvis	34	22.5
Criminal Inductions	24	15.9+3.3% of 717
No Known Cause	56	37.7

Turning to Table No. 2, listing 151 pregnancies terminated before the 30th week, we find that 10.7%, or one in every 9 or 10 abortions are accounted for by epidemic or systematic infection. Although by many authors syphilis is given as the causal agent in the larger percentage of foetal deaths, in our series it is practically negative. In repeated abortions without known cause, however, syphilis is always suspected and a Wassermann taken. Foetal deaths due to toxemia and therapeutic termination account for 15.5% of 151 or 3.2% of the total of 717 pregnancies. Termination of pregnancies due to this cause could undoubtedly be lowered if one were able to see the patient in the beginning of pregnancy and if hospital care could be secured. Pathology of the pelvis accounting for 22.5% of the total number of premature termination of pregnancies should also be lower. A large number of these occur in multipara and reflect on the recovery from the preceding pregnancy. That 3.39% of all pregnancies or one in thirty is a criminal abortion, is a lamentable observation and a reflection on the moral rating of society. A very small part of these were induced by some physician. In addition to this definitely recorded number of criminal abortions, we believe that a considerable number of those to which no cause is assignable would, if the entire history could be secured, fall in this classification.

Turning now to the complications of pregnancy before labor, we have the following tabulation:

TABLE NO. 3

COMPLICATIONS IN 566 PREGNANCIES REACHING VIABLE AGE OF FOETUS

Prepartum Hemorrhage	5
Pyelitis	4
Threatened Eclampsia	4
Placenta Pravia	6

These, however, include only the well defined cases. In the group of 23 therapeutically terminated pregnancies listed in table 2, fall 10 cases of severe toxemia, which might be considered as potential eclamptics, and in this group occurred one death due to a late decision to empty the uterus. In three of the severe cases of hemorrhages preceding labor, placenta praevia was the causal factor, and in two premature separation of the placenta.

TABLE NO. 4

COMPLICATIONS OF LABOR

		Live Child
Forceps	22	19
Difficult labor	15	14
Face and Brow	2	0
Uterine Inertia	5	5
Version	8	4
Placenta Praevia	3	0
Transverse presentation	5	4
Breech	15	10

(Two versions for placenta praevia—premature child)

In a retrospective consideration of the forceps delivery, we believe that two of these should have been delivered by caesarean section and in one instance it was recommended, but declined. Under difficult labor are listed occiput posterior, disproportion of head and pelvis and dry labor. The fifteen breech presentations is in line with usually reported frequency of occurrence, slightly less than 3%. The foetal mortality of 33⅓% seems unnecessarily high and no doubt by more skillful handling and under more convenient circumstances it could be materially lowered.

TABLE NO. 5

CAUSES OF STILL BIRTH

Forceps—	
Brow	2
Difficult Labor	1
Eclampsia	2
Version for Placenta Praevia	3
Version for transverse	1
Breech	5
Anomoly cord (1 included under breech)	3
No known cause	1
Total	17 equals—3%
(Premature)	9
Not surviving lying-in period	12—21.1%

A lack of competent assistance, poor light and delivery on a bed presents a very formidable handicap in the management of any complication of labor, less than 10% of the total number of pregnancies having been hospitalized. This still birth rate of 3% approaches the 3.85% for Jefferson county for the year of 1926(4) and equals the 3% which is the average for the state of Nebraska. Adding to this the premature deaths of 2.1%, we have a gross birth mortality of 5.1%.

Postpartum complications and post puerperal morbidity probably presents the best index to the skill and care with which obstetrical practice is conducted. Although women in rural practice receive poor nursing care this is partly compensated for by their lessened exposure to more virulent strains of infection. The following tabulation presents the occurrence of these complications in the series of 566 pregnancies in which the foetus reached a viable age.

TABLE NO. 6

POST PARTUM COMPLICATIONS

Hemorrhage	4
Pyelitis	7
Severe Mastitis	3
Puerperal Sepsis	0
Sapraemic Infection	4
Tubal Infection and Pelvic Cellulitis	3
Maternal Mortality	0
Total	21

In the group of 717 pregnancies, two women were delivered by caesarean section, by an outside surgeon. In the entire group of 717 pregnancies, ectopic pregnancy occurred in three, one of whom died, one hour after first being seen, making the total number of maternal deaths two. Twins occurred four times. One of these a mummified foetus with separate detached placenta, developed to about the 24th week, was delivered preceding the normal child. Manual removal of the placenta was necessary on account of bleeding in three instances. Anomolies of the cord with delivery of dead monster, one of which was a breech, occurred three times.

Of the 566 pregnancies approaching full term, 79 or 13.9%, approximately one in seven were abnormal in some respect. If we add to this 151 prematurely terminated pregnancies, we have only 2 out of 3 of the total number going through a normal course. Such, or even a higher ratio of abnormalities may reasonably be assumed to occur in all rural communities.

CONCLUSION

One out of every five pregnancies terminates before foetus reaches a viable age.

Three out of four net a live child at the end of the lying-in-period.

Of those approaching full term, one out of every seven is abnormal in some respect and considering all pregnancies, two out of three reach fulfilment without abnormalities.

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DISCUSSIONS

EARL C. SAGE, M. D., (Omaha): As state leader for the Joint Committee of Maternal Welfare, I am especially grateful to hear a paper by a general practitioner on this subject. I think he is to be congratulated upon the results he has obtained. When anyone cares for 717 pregnant women and has but two maternal deaths, he is to be commended.

I wish to call attention to a few facts concerning the value of prenatal care to which every expectant mother is entitled, and again make a plea for better obstetrics. We should not forget that more than 5 women die from the disorders of pregnancy and childbirth out of each 1000 births registered; this being equivalent to one maternal death out of every 185 confinements. The loss of life is still greater, when we find that forty-five babies out of every 1000 births or one out of every twenty-two are born dead, and that 40 babies out of every one thousand born alive die before they are one month old.

To give a comprehensive view of the situation the figures from the obstetrical statistician for the Metropolitan Life Insurance Company will be used. This company finds that of all holders of policies maternal mortality is the highest; i. e. 6.4% in 100,000 cases and the causes are recorded as follows: Septicemia 42%; toxemia and eclampsia 26%; accident of labor 10%; hemorrhage 8%; abortions and miscarriages 10%; miscellaneous causes 4%. Many of these deaths could be prevented—certainly not such a high proportion of infected women need sacrifice their lives because their attending doctor failed to employ aseptic precautions.

When we compare the above figures with women who have received prenatal and maternity care under skilled direction, we find that (1) two instead of five die out of every 1000 confinements, (2) only 12 babies instead of 45 are stillborn in every 1000 confinements, (3) only 10 babies instead of 40 per 1000 born alive die under one month of age; these results being attained in Boston, New York City and elsewhere. We can now see how imperative it is that adequate nursing and medical care become available to women during pregnancy, at confinement, and during the first month of the infant's life. Every year in the United States more than two million women submit themselves to a contest with death in bringing children into the world. Inasmuch as woman makes the most important contribution made by any class of society to the state, should not we doctors safeguard her life and that of her offspring to the greatest possible extent?

Maternal mortality in the United States is from 6 to 9 per 1000 births. I am glad to report that for 1926, the average of maternal mortality per 1000 births for the whole state of Nebraska was 5.48; for the United States in 1926 it was 7 to every 1000 live births according to the U. S. Department of Labor, Children's Bureau Statistics.

In closing I would like to call your attention to the "Standards of Prenatal Care" (U. S. Children's Bureau Publication No. 153). If we would all follow these excellent suggestions in our daily practice regardless of where we are located, I am sure we would materially reduce our maternal mortality. I have enough copies here to furnish one to all of you.

Again I wish to compliment Dr. H. E. Harvey on his excellent paper and the efficient care he and his associates have given their obstetrical patients in rural practice.

C. EDWARD SAYRE, M. D., (Norfolk): I want to compliment the essayist on his paper. It is well written and shows a good deal of thought and care in the statistics. I have never been in rural practice, so I know practically nothing of the difficulties of practice in the countrty; but I believe that if he had had hospital facilities, he could have saved practically all the children.

These placenta praevia cases are the ones for cesarean section. Of course if the physician does not have the case under his care, it is not his fault. Sometimes he is called after the patient starts in labor. He has no opportunity to make a diagnosis before that time, and the patient may be so far advanced he does not have time to get her to the hospital for a cesarean. If patients will put themselves in the hands of the physician as soon as pregnancy begins, by periodic examinations a diagnosis of placenta praevia can be made before labor sets in, so that you may be prepared for proper delivery.

Of course, some patients are brought to the hospital after repeated examinations, and it is not safe to do a cesarean section, because it is almost impossible to make repeated examinations without contaminating the vaginal tract. If the doctor will always make a rectal examination to determine the position and the the stage of delivery, he will then have a sterile tract and can do a section if necessary. I will admit in the beginning it is a difficult matter to make a diagnosis by a rectal examination. We were taught, when I was a student, to make vaginal examinations. It took me a long while to get away from that. If you keep at it you can accomplish it. Our fingers become educated so as to recognize the position practically as well rectally as vaginally.

I believe where there is disproportion of the child and the pelvis, it is another indication for cesarean section. Where this occurs and it is necesssary to apply forceps, we know the enormous mortality. There again comes in the matter of making rectal examinations. The same thing applies in a breech presentation. There is a mortality of 33 1-3 per cent in breech presentations. I will admit it is a difficult matter to deliver a breech, but the mortality from these can be cut to nil by cesareans.

Another point mentioned by the doctor was abortion by premature labor. I think in 99 per cent of the cases that the doctor has classified as "unknown cause", they may be attributed to abortion. Women will not admit that they have done anything or been aborted by a doctor. About 15 per cent admit criminal abortion.

RALPH LUIKART, M. D., (Omaha): I should like to congratulate the essayist not only on his paper, but on the excellent report of mortality. I doubt if there is another man here who can say he has done 700 cases without the loss of a mother. I do not wish to be a pessimist, but I think he has some coming to him.

There are two points I should like to mention. One is in regard to the statement of Dr. Sayre in connection with cesarean section. Regardless of who the man is who does it and what his facilities, I think the mortality is higher in cesarean than in a properly handled breech, placenta praevia, or in conditions needing version. When there is a disproportion of the pelvis to the child, a cesarean is unavoidable if the fetus is to live. I think in a properly done version or properly handled breech—some things learned from Dr. Potter—the mortality has been put down as low as in case of a vertex presentation. I cannot agree a cesarean is the thing to do in placenta praevia in but a very few cases. It is the exception, rather than the rule, in my opinion. I think that is generally agreed throughout the country. There was an epidemic when cesarean was done for everything that came along, and the mortality was raised.

I believe packing with gauze is an error. It acts more as a drain than to suppress the hemorrhage. By packing with wet cotton or using a bag, whichever is preferred, the case can be handled with less mortality and less morbidity.

In regard to rectal eaxminations, some of us younger fellows have been brought up on rectal examinations. I think the rectal examination should be done in most cases rather than the vaginal. However, occasionally a vaginal must be done, because with a non-viable cervix it is impossible to tell on rectal examination. The cervix can be definitely felt, but the cause of the delay cannot be determined until the fingers are put into the cervix and stretched, and we can determine the cause of the delay. If nothing else can be found, it may be a rigid cervix.

So far as mortality and morbidity are concerned, I should like to emphasize a point which has been talked about in recent years, and that is in regard to the weight of babies. I believe if the baby's weight can be kept in the neighborhood of seven pounds as an average weight, there is less danger later of infection, because the passing of a large passenger through the passage way traumatizes and lacerates the tissues. With a child whose weight does not exceed seven pounds, the kidneys are not burdened with an over-abundance of fluid and the liver has a greater power because it is not worn out by over-feeding. I believe the biggest share of our trouble is the result of over-feeding.

It is not an easy thing to diet a patient satisfactorily because we have somebody at home who tells her, "Remember, you must eat for two." The patients do not tell you that. If we can get the patient's confidence and keep the weight so she does not gain more than two pound a month during the ten lunar months of pregnancy, watching when she has these periods of malaise or weakness and lower blood pressure as a result of over-dieting. Sometimes if too strictly dieted, the blood pressure will drop as low as eighty. I let such patients eat as they please without regard to dieting for two weeks. The blood pressure will come back to one hundred and the general condition will be improved. If not too strictly dieted and the weight held in the neighborhood of two pounds increase per month, many of our difficulties will be eliminated.

W. H. WILSON, M. D., (Lincoln): I am glad that this subject has been brought up. In the last two decades, infant mortality has been reduced one-half. Maternal mortality has practically been at a standstill. That is not creditable to the medical profession when you consider the advancement we are making on other subjects.

I want to take this opportunity to say I have no patience with the Journal of the American Medical Association the way it has fought this Shepard-Towner act, trying to discredit it, and this prenatal care that is provided by it, with the profession. I am pleased to see many, I think the majority, of the physicians of this state are backing our Department of Child Hygiene very nicely. Our help has met with some discourtesy in some quarters, I am sorry to say; but I want to assure you the Department of Health, through its child hygiene, is doing everything it possibly can to assist the physician in prenatal work and obstetrical work. The mother-craft meetings being held and the literature being spread broadcast to lying-in women and expectant mothers all urge these women to see their physician. The Journal of the American Medical Association has tried to make it appear this was something that was going to supplant the physicians. In Nebraska, it is nothing of the kind. It is supplementing his work, and it is hoped and believed, and according to this report, it has shown much good can be accomplished and maternal mortality can be reduced by this very work.

DR. HARVEY, (closing): I appreciate the kindly discussion the doctors have offered.

I wish to correct the impression as to maternal mortality. You will notice from the table there are two maternal deaths, one due to ectopic pregnancy and the other to a toxic condition of the mother. The second one occurred at about the fourth month. Further, I wish to mention in connection with this that the figures which Dr. Sage called to your attention are collected largely from clinics and charity organizations. They are, therefore, as I wished to convey to you in the paper, not of the reliable sort you would secure from the rank and file of the patients as occurring in private practice.

Dr. Sayre urged cesarean section. In the best of hands, the maternal mortality is 4 per cent, or better. The fetal mortality will be less than already given. If we take into consideration further that many of these cases of placenta praevia have not reached full term, we can readily see in all probability the fetal mortality would not be greatly lessened, and the maternal mortality would undoubtedly be increased. Conservative obstetrics the nation over, by all men who have made a study of it, has, I think, given the best results.

I wish to thank Dr. Luikart particularly in calling attention to the value of keeping down the maternal and infant weight. While it is always a good thing to keep in mind, it is very difficult to manage in country practice, and I think the same is true in the cities. To a larger extent than is generally appreciated, we are not able to control the patient in several respects, particularly in connection with diet.

In this series, 63 per cent had some maternal care. In many instances it amounted to little more than making a urinalysis during the last three months. In 30 per cent, prenatal care was carried on from the third month. If I had time to make comparisons between those in which maternal care was utilized from the beginning and those in which it was not, we could show a very much lower fetal mortality in the former.

THE NATURE OF CANCER

The work of Gye and Barnard in connection with an organism causing cancer has not been confirmed by other investigators.

The present evidence indicates that cancer is not a contagious disease, but a disease of the *cells themselves,* resulting, perhaps, from some intrinsic, physical or chemical disturbance.—Drs. Harkins, Schamberg, Kolmer and Kast, in *J. Cancer Research.*

Early mobilization of joint fractures necessitates much time and trouble and requires careful supervision. This must be emphasized, because there is a tendency for the busy physician to splint such a fracture, and, if the x-ray shows good position, to content himself with the reflection that he has done all that is possible and the rest is the work of nature.—Dr. P. D. Wilson (*Boston Med. and Surg. Jour.*).

ETIOLOGICAL FACTORS OF BRONCHIAL AND LOBAR PNEUMONIA*

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The importance of determining the etiology of the pneumonias is not realized by the average physician. More emphasis is given to the diagnosis, the development of pathological anatomy and to the clinical course. The first question that enters our minds when we encounter a set of symptoms and signs by which we name a disease pneumonia, is what pathological lesion exists? Is it bronchial or is it lobar pneumonia? What part of the lung is involved? A case history of the illness and antecedent factors should be taken. In case of bronchial pneumonia, what injury or what kinds of infection preceded the lung involvement, together with the form of micro-organism as the exciting cause should be determined. In lobar pneumonia, what are the predisposing causes, but more particularly, what types of pneumococci are responsible for the infection.

First, we will take up Bronchial Pneumonia. It is not at the present time considered essentially an independent disease or a clinical entity. It is a form of pulmonary inflammation, resulting from many conditions. Much is said in literature as regards bronchial pneumonia being a primary or a secondary infection. By primary infection is meant, according to Arthur L. Bloomfield, "The invasion of a previously healthy tissue—a virgin soil—by organisms which proceed to unfold their activities, at the site of innoculation; by secondary infection one means the entrance and growth of bacteria in a region already damaged by preceding infection or injury".(1).

Unlike lobar pneumonia which is essentially a primary disease, bronchial pneumonia is largely a secondary one. It does not have a characteristic clinical course; it does not produce a constant pathological condition; it is not caused by common pathogenic organisms. It produces certain symptoms and follows different courses, depending upon the type of infection or injury that precedes it. The form of micro-organism that acts as the exciting cause is considerably modified.

The pediatrician encounters bronchial pneumonia as a primary disease, when it occurs in infants under two years of age. It then resembles lobar pneumonia and practically all cases recover. The pneumococcus is the infecting organism.

Many predisposing causes have been attributed to secondary bronchial pneumonia. They are climate, altitude, race, soil and age. It may occur at any time in life and is most frequently found in children, associated with the specific infectious diseases, and in old age as a terminal condition. It occurs in those with general lowered resistance from debilitating influences. The large group of terminal or hypostatic pneumonias which occur in individuals who are bedridden for a long time is explained by the injury, resulting from the mechanical factors of relaxed or unexpanded lung tissue. This makes infection follow more easily. Foreign bodies in the lungs or bronchi set up inflammation about themselves. Aspiration pneumonia is the direct result of injury to the respiratory tract, especially the respiratory and deglutition reflexes. When they do not function properly because of anesthesia, or operations on nose and mouth, diseases of the pharynx, larynx, or esophagus, the aspiration of infected material or vomitus frequently results in bronchial pneumonia.

Much is written about post-operative pneumonia. It is too large a subject to be discussed here. In general, we may say it frequently follows from neglect of first taking care of all the focal infections of the upper air passages and mouth, particularly the sinuses, tonsils and teeth. Likewise, pulmonary abscesses frequently follow operative interference in the upper respiratory tract. Infected blood clots, emboli in the blood stream may cause septic infarction and areas of bronchial pneumonia. When these coalesce because the blood stream is interrupted, pneumonia or pulmonary abscesses may follow.

Another cause occasionally seen in these diseases, is the direct extension from other inflammatory processes, either in the lungs, as in bronchiectasis, in ruptured empyemas, or even the rupture of a liver abscess penetrating the diaphragm.

Most authorities include among the predisposing causes of bronchial pneumonia(2), the factors of exposure and cold. Undoubtedly this does lower resistance and leads to infection. It is certain we have more respiratory infection during the late fall, the winter and the early spring months.

Another factor, seen during the World War, particularly, was that of chemical irritation such as war gas poisoning(3). Either anesthesia or arsenical poisoning may disturb the protecting epithelium or the respiratory mucosa and be followed by pneumonia.

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G. F. Langlen reported in the American Journal of Pathological Studies(4) on pneumonia, following naso-pharyngeal injection of oil. He reported three cases where oil had been given to children by nasal drops, which were allowed to run back into the nasopharynx. The oil found its way into a terminal air passage, resulting in a complication of septic pneumonia. His observation suggested that oil lowers the resistance of the tissues and also carries infection from the nose into the lungs.

Aside from the factors previously mentioned, the chief causes of secondary bronchial pneumonia are the specific infectious diseases such as measles, whooping cough, scarlet fever, influenza and diphtheria and the non-specific infection—bronchitis, or bronchial catarrh. Rarely does bronchitis precede pneumonia in the strong robust adult, but in the debilitated individual, with a chronic disease, or in old age it is a constant factor.

The *exciting causes* in all cases of bronchial pneumonia are some kinds of micro-organisms. The most common bacteria found are the streptococci, both the hemolytic and the green producing types, the pneumococci, influenza bacillus, staphlococcus pyogenes aureus. Other pathogenis organisms found infrequently are meningococcus, Friedlander's bacillus, the diphtheria bacillus, and typhoid bacillus. The streptococcus is the organism most frequently found in bronchial pneumonia. It is classified in the hemolytic and veridans group. The streptococcus hemolytic causes a severe form of lobular pneumonia, frequently complicated by multiple abscesses and empyema. It is often recovered from small passages of terminal bronchial pneumonia, during autopsy, in cases of chronic systemic disease. Aside from association with the terminal bronchial pneumonia, the streptococcus viridans, produce a very mild form of pneumonia. The mortality is less than two per cent. It is not frequently complicated with empyemas or lung abscesses. The mode of bacteria infection of the lungs is generally believed to be by the air breathed into the lungs. The possibility of infection through the lymphatics or by the blood stream, in cases of septic infections, is to be considered and no doubt does exist. This will be discussed more fully later.

Having now considered the etiology of bronchial pneumonia, we will turn our attention to lobar pneumonia. Lobar pneumonia is an acute infection of a generally accepted clinical entity. Many etiological factors are concerned in its occurrence. The determining of the bacteriology of this disease is of chief importance, particularly in its successful treatment. Before the types of the pneumococcus which are the direct causes of this disease are discussed, I will take up briefly the classic text book factors considered as essential predisposing causes.

It has been noted that lobar pneumonia occurs more frequently in men than in women in the ratio of 2 to 1. This is explained because of different environmental conditions and to the greater exposures on the part of men. The disease occurs most commonly between the ages of 12 to 35 but is most fatal in the very young and very old. Climate and season play a certain part. In the winter and early spring more cases develop. Sudden changes in temperature apparently reduce resistance and exposure to cold and wet increase respiratory infections. Other factors worthy of mention are related to the individual, such as predisposition to subsequent infections. One attack is apt to precipitate another. The character of occupation is a slight factor. It has been shown that laborers out of doors in the city are more subject to the disease than indoor workers. This is not true among the people living in the country. However, the mortality is high among indoor workers.

The factor of natural immunity enters into the frequency of this infection. It must exist to a rather high state in most people. Under ordinary conditions few really acquire the disease. It has been proven that types 1 and 2 of the pneumococcus which are frequently found in patients with the disease, or who are in direct contact with the disease, are not ordinarily present in normal mouths. It was formerly thought that the pneumococcus, before the different types were isolated, were constant habitants of the mouth, that the infection was autogenous. The patient became infected by the bacteria already present in his mouth because of lowered resistance or lack of immunity for activated organisms in producing a lobar pneumonia. This is no longer believed as regards all types of the pneumococcus(5). There are many factors which affect the transmission of the bacteria producing pneumonia, such as the crowding together of the people, the habits of the individual, and means of travel. Also, there are factors which may have an active part but little is known of their exact bearing, such as altitude, temperature and dust conveyance.

Lobar pneumonia is frequently associated with other diseases. One of the most frequent is that of influenza. The mortality is greatly increased when this complication occurs. It takes place in many chronic diseases as in the course of diabetes, wherein gangrene of the lung is an occasional complication. No doubt focal infection such as infection in the teeth, tonsils and sinuses play a big part, in complicating the picture of lobar pneumonia, however, not to the extent as is usually seen in bronchial pneumonia.

Bacteriology of Pneumonia. There are really three bacteria commonly concerned in the etiology of acute lobar pneumonia; the pneumococcus, the streptococcus and bacillus influenzae. Friedlander's bacillus, staphylococcus pyogenes aureus and the meningococcus are other microorganisms rarely responsible for the disease. Avery and Douchez report in their research work in the Rockerfeller Institute at New York, 529 cases of acute lobar pneumonia produced from the following etiological agents:(6)

Diplococcus pneumoniae	454
Friedlander's bacillus	3
Bacillus influenzae	6
Streptococcus pyogenes	7
Streptococcus mucosus	1
Staphylococcus aureus	3
Cases of mixed infection with combinations of staphylococcus aureus, Friedlander's bacillus, B. influenzae, streptococcus pyogenes, and streptococcus viridans	6
Undetermined (most of them occurring before accurate methods for determining the etiologic agent had been devised)	49
Total	529

It is seen by this report that the large majority of the lesions are caused by the diplococcus pneumoniae. This bacteria is the usual exciting cause of lobar pneumonia. It is typically a diplococcus. The pair are lancet-shaped and encapsulated, non-motile and do not form spores. It stains well with analine dyes and is gram positive. It can be grown on ordinary culture media. The pneumococcus is often difficult to differentiate from strains of the streptococcus and can be only definitely determined by cultural and agglutination methods. Biological classification has been made by O. T. Avery, Douchez, Chickering, and Cole, in the Hospital of the Rockerfeller Institute(7). The pneumococcus is differentiated into four definite types called Type One, Type Two, Type Three and Type Four. Of these types it has been shown that they follow the two general classes. Type One, Two and Three make up the larger class or about 80% of all the strains encountered in the disease. They represent three fixed types of highly parasitic organisms, each having common immunologic characters. The pneumococcus Type One is the common cause of the lobar pneumonia infection in men, causing about one-third of the cases. Type Two occurs next in frequency. Type Three frequently called the pneumococcus mucosus produces the least number of cases of pneumonia. Type Four causes about 20%. It is composed of many indefinite unrelated strains which cannot be placed in the other three groups and is a type most frequently found in mouth secretions of healthy people.

These types of the pneumococcus can be accurately determined and differentiated. The method usually employed, is to innoculate a white mouse intra-peritoneally with sputum from the suspected case. The pneumococcus is then recovered for cultural methods from the heart's blood after death of the animal. This usually takes about 48 hours. However, by the agglutination and precipitin(8) tests the specific type of pneumococcus can usually be determined in about eight hours. The time element is of great clinical and therapeutic importance.

Cases scientifically investigated by Neufeldt(9) and his associates have shown that the pneumococcus strains conform to type. The distinctive differences in the immunological properties of this parasite furnish a basis for the immunization and treatment of lobar pneumonia. It is now proven that certain cases of pneumonia may be successfully treated with the serum of immune animals if the organism used in preparing the serum is the same as that which is causing the infection.

In 1917 and 1918, during the influenza epidemic, the influenza bacillus complicated the many cases of pneumonia, wherein Type Four of the pneumococcus was the chief etiological factor. There was a large relative increase of cases in this group. Some encampments showed a larger per cent of Type Four pneumonia than Types One and Two. In 1920 the ratio returned to the conditions prior to this epidemic.

In 1922 there were studied 200 cases of pneumonia in Bellevue hospital. The distribution showed pneumonia produced by the pneumococcus Type One, 86 cases; the pneumococcus of Type Two, 39; the pneumococcus of Type Three showed no cases; whereas the pneumococcus of Type Four produced 41 cases. This showed that the influenza epidemic was only a temporary incident and that the fixed types of pneumonia are the exciting strains of the pneumococcus producing lobar pneumonia.

The streptococcus, both the hemolytic and the veridans, act in the lobar pneumonia quite similar to that in the bronchial pneumonia. The influenza bacillus produces a rather characteristic type of pneumonia. It rarely occurs in pure culture so it is difficult to see what part of the process is due to the influenza bacillus or what part to some other bacteria. Autopsy reveals it usually associated with bronchitis, bronchiolitis and with peribronchial consolidation. There is a tendency in the latter stages for the development of empyema and bronchiectasis.

Friedlander's bacillus produces a definite type of lobar pneumonia. It is usually fatal but fortunately it is rare. William P. Balk reported in the Journal of Infectious Diseases in February, 1926, 18 cases of pulmonary infection of Friedlander's bacillus(10). Of the 18 cases, 15 occurred in males and three in females with the average age of 52 years. All cases proved fatal. The duration of illness varied from one to five and a half days. All of these cases were atypical to the regular pneumococcus type. The staphylococcus is another unusual affecting organism, producing pneumonia. It is also rare and usually fatal.

It is a generally accepted theory that lobar pneumonia is in air-born infection, carried by aspiration or inhalation through the nose and mouth, into the lungs. The frequency of anesthesia or aspiration pneumonia points to this route. Those who favor the hematogenous theory, or infection by the blood stream, base their argument upon the finding by blood cultures, in many cases, of general bacteremia, in the very early stages of pneumonia.

Animal experiments on the monkey show that lobar pneumonia is bronchiogenic rather than hematogenous in origin. Constant production of the disease in a monkey by intra-tracheal injections, and constant failure to produce it by subcutaneous injections, is believed to be conclusive evidence that infection in lobar pneumonia takes place by the way of respiratory passages and not through the blood stream.

In conclusion of this discussion, I wish to emphasize the following points:

First, that lobar pneumonia is a primary disease and bronchial pneumonia is usually a secondary disease.

Second, that it is not so important to decide, whether we are dealing with a bronchial or lobar pneumonia or the exact pathological lesion in the lung, as it is to determine the kinds of micro-organisms we are dealing with and the predisposing factor, particularly, the type of infectious disease in bronchial pneumonia.

Third, the determination of the etiology of the pneumonias plays a large part in the proper diagnosis, prognosis and especially the treatment of bronchial and acute lobar pneumonia.

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PNEUMONIA: DIAGNOSIS AND DIFFERENTIAL DIAGNOSIS*

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Lincoln, Nebraska.

If one thinks of pneumonia as any inflammation of lung tissue, that is as a pneumonitis, the diagnosis and differential diagnosis reaches out to include so many diseases of the lungs that it is much too broad for a paper of this kind. We must, therefore, exclude many of the inflammatory conditions of the lung in order to bring the subject within the limits alloted in this symposium, and I propose to limit my discussion to some of the acute inflammations of the lung, lobar pneumonia, bronchopneumonia, embolic pneumonia, acute tuberculous pneumonia, and acute interstitial pneumonia.

Lobar pneumonia. Typical lobar pneumonia attacking, as it usually does, the robust individual in the midst of good health, suddenly, with the typical pain, chill, rapid, abrupt rise in temperature and quickly developing signs of involvement of one or more complete lobes of lung tissue, with pain in the chest, marked prostation, rapid breathing, early rusty sputum, leucocytosis, etc., requires but little discussion.

There are, however, one or two conditions which should be mentioned in this connection. A lobar involvement of an upper lobe, may be much slower than that of a lower lobe and the physical signs delayed in developing, with less complete involvement, later appearance of typical rusty sputum, lower fever and less leukocytosis. It may, therefore, be confused temporarily with a lobular pneumonia or with acute tuberculous infiltration.

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*Read before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

As we all are aware, the early pleural involvement of lobar pneumonia may involve the pleura of the diaphragm or lower chest wall and give rise, by referred pain, to all the signs of an acute surgical belly. The pain may simulate appendicitis, ureteral colic or even ruptured viscus. When this occurs on the right side it often leads to uselessly opening the abdomen. I have seen upper abdominal pain rivaling that of perforated viscus, with as board like rigidity as may be seen in acutely perforated gastric or duodenal ulcer, due to lobar pneumonia, with no abdominal lesion. Jaundice may further complicate the picture and add to the diagnostic difficulty.

Bronchopneumonia. Here, again, the typical disease can seldom be confused with other lesions. The character of the chest findings, however, is vastly more varied than in lobar pneumonia, hence more misleading. The tendency to attack individuals already sick or in some way below par, the more insidious onset, the chance of great variety of lesions as to size, depth within the lung tissue, and distribution of the various patches, etc., make this lesion more difficult of diagnosis than lobar pneumonia. It is impossible to think of the diagnosis of bronchopneumonia without thinking in terms of pathology. If one has observed in the microscope, the fine radicle of the bronchial tree full of exudate, a condition often termed capillary bronchitis, then, in another field, the first layer of surrounding air vesicles filled with exudate and in still other fields wider areas of inflammation, surrounding the broncholes, he knows that it is impossible to tell when the bronchitis ceases and the process reaches proportions that can be recognized clinically as bronchopneumonia. A small area of consolidation deep within the lung may require days before it can be recognized by physical signs, in fact may go on to resolution without definite recognition unless the chest be x-rayed. The fact that the individuals attacked are often below par and without the average resistence may lead to relatively slight fever and other general signs and less leukocytosis in this type of pneumonia, as compared with the lobar type.

Often we must make our diagnosis early in the disease by exclusion. A patient with a respiratory infection of some ordinary type, a patient ill with some other form of disease, a mal-nourished infant or an aged individual, who begins to run on irregular fever, with or without evidence of lung involvement, such as rapid respiration, rapid pulse, cough, chest pain, etc., are at once under suspicion providing no other cause for the fever is evident. Continued observation will usually reward one, sooner or later, by showing some definite physical findings in the lung. If x-ray is available it may show lesions which cannot be determined by physical signs.

Not infrequently a massive bronchopneumonia bears the label of lobar pneumonia purely because the whole or a greater part of one lobe is involved at one time. Observation of the course of the disease while thinking of the development of the pathology of broncho-pneumonia should separate these two diseases without listening to the chest, but if one goes over such a lung he will be able to pick out lesions of different age from the relatively dry consolidations to the patches underging resolution all within the same massive patch of solid lung, for, of course, it is probable that no massive bronchopneumonia occurs in which the areas that eventually coalesce to form the conglomerate mass all begin at the same time and are all in the same stage of consolidation.

In both these types of pneumonia it is important at the earliest possible time, to carry the diagnosis beyond the physical signs to the causative agent. Of course, the cause of typical lobar pneumonia is so frequently the pneumococcus that it can be accepted as such in practically every case. The favorable result from the use of certain quinine derivities when the pneumococcus is the causative agent, if begun early in the disease, should lead us to determine this factor at once. Typing of the pneumococcus should be carried out as soon as sputum can be obtained because type 1 infection responds well to the use of anti-pneumococcus serum, type 1. I am opposed to the blind use of mixed sera in the hope that we may hit the mark by chance, because a foreign protein given uselessly may tax these patients more than we suppose.

Embolic Pneumonia. Under this heading I mean to include both the ordinary pulmonary embolism occurring post-operative or after fracture, etc., which varies from a very small and insignificant affair to a large infarction, and the wide spread bacterial emoli which are, as a rule, rather evenly distributed throughout both lungs. In the first type the embolus is usually a small clot with or without bacteria, or a fat fragment. Usually it is single and heralds its arrival in the lung by a sharp pain followed shortly by a pleural friction rub at the site of the pain. It is seldom difficult to diagnose and definitely locate. Depending on its character it may or may not set up a pneumonic process in the surrounding lung. It may precipitate a pneumonic area nearly simulating a lobar pneumonia. Even in this case it is often possible to pick out the area of original infarction both from the localization of pleural sounds and from the failure of transmission of breath sounds through the infarcted area as compared with the surrounding consolidation.

The second type, that due to widely scattered bacterial emboli, is often very hard to diagnose from physical findings. It most often follows within 48 hours after upper abdominal operations. I have noted it after operations on chronic cholecystitis oftener than any other condition. In the cases I have observed it has been due to a streptococcus and has killed the patient long before the individual areas of consolidation within the lung were large enough to be recognized by physical signs. Post-mortem examination has shown these areas to be all of practically uniform size, fairly evenly distributed through the outer 1/3 of the lung and usually less than 1 cm. in diameter. It is probable that the x-ray might make the diagnosis in the absence of physical findings but it is not always possible to use this means, even in the hospital, because the patient is too ill. In such a case the diagnosis is less important than in some other types because the outlook is hopeless under any circumstances.

Acute Interstitial Pneumonia. This is a distinctive type of pneumonia seldom seen now but very common during the influenza pandemic. It is a particularly fatal type of pneumonitis and very difficult to diagnose from physical findings. In the wards, during the recent influenza epidemic the attendants learned to diagnose these cases more from the clinical appearance than from the lung findings. The involved areas were practically always very much more extensive than one would think from his findings. There is, over the pneumonic lung, a lessened resonance, a diminition in the intensity of the breath sounds, often no typical bronchial breathing, and when present it is likely to be distant, and little or no moisture. The patient is much sicker than his lung findings indicate.

The reason for this sparsity of findings is evident from the pathology. The inflammation is in the walls of the air vesicles. These walls are thick because they are filled with exudate containing, often, a large number of polymorphonuclear leukocytes. The air vesicles themselves are relatively empty. Some may contain a few leukocytes and desquamated endothelial cells. The aveolar walls may be so thick in some areas that they produce a complete atelectasis. Grossly, the lung is large, red, and has the feeling of rubber. The cut surface is not granular and liver-like as in lobar pneumonia, but moist appearing and lacy because the alveolar walls are thick and more visible than usual. Pressure on the lung indents it but does not easily tear it, and less fluid is expressed than one expects judging from its appearance.

Acute Tuberculous Lobar Pneumonia. My only excuse for mentioning this type of pneumonia is that we have so well fixed in our minds, the fact that usually an acute inflammatory disease of the lower half of the lung is non-tuberculous, that when such a lung fails to clear up we usually ascribe this failure either to unresolved pneumonia or fluid in the pleural cavity. Thinking of this abstractly it seems unlikely that we can so often overlook this possibility, but, nevertheless, about every so often one sees a case of so-called "unresolved pneumonia" or "pleural effusion", which is found to be, instead, acute tuberculous' pneumonia. Usually, by the time doubt arises in the mind of the attending physician as to the nature of the disease, the diagnosis can be made by finding tubercle bacilli in the sputum. Prior to this, however, the drenching sweats, bloody sputum instead of rusty, less regular type of fever, probable involvement of the opposite apex and delayed appearance of leukocytosis should lead to a strong suspicion and by the time the expected crisis fails to appear proof of the nature of the disease should be found in the sputum.

The pneumonic type of phtnisis may also simulate bronchopneumonia both as to symptoms and physical findings. The diagnostic features of this type are quite like those of the lobar type.

DRUG TREATMENT OF HEART DISEASE

Robert L. Levy and Thomas T. Mackie, New York (*Journal A. M. A.,* Aug. 6. 1927), discuss the mode of action, indications and contraindications, standardization, mode of administration, dosage and toxic effects of drugs used in the treatment of circulatory failure. These include such as, digitalis, quinidine, theophylline (theocin), theobromine and theobromine sodiosalicylate, meraphen (novasurol), the bromides, chloral, the nitrites, given as glyceryl trinitrate by mouth, or amyl nitrite by inhalation, euphylline (theophylline-ethylenediamine), salicylates or cinchoninic acid derivatives (cinchophen and neocinchophen), barium chloride, mercury and iodide, bismuth and the arsenicals. In all cases, the use of these drugs should be combined with intelligent treatment of the diseased heart.

MEDICAL TREATMENT OF DISEASES OF THE CHEST IN CHILDREN*

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Chest conditions in children include quite a wide range—foreign bodies, tuberculosis, asthma, large thymus gland, etc. We will pass these up and take up bronchitis, tracheitis, pneumonia, pleurisy, and empyema. Excluding lobar pneumonia and taking up the others, I will take up bronchitis in varying degrees at various stages of development, because it is the same condition carried a bit further, which may be arrested anywhere along the line, and gives us varying diagnoses.

Lobar pneumonia I feel is a rare condition at any time of life, and extremely rare in childhood. By that I mean the true lobar with a definite lobar involvement. The mortality runs from 75 to 90 per cent. The organisms in children with this disease are usually pneumococcus and streptococcus hemolyticus. The bronchopneumonias are due to the same, plus influenza, plus staphylococcus.

Our mortality in pneumonia in children is about what it was thirty years ago. With all the additional things we are doing, our mortality remains the same. That mortality is going to continue to stay about what it was thirty years ago, thirty years from now, unless we change our viewpoint. As the first speaker pointed out, we are going to have to get at this thing from a bacteriological point of view. We do not treat a sore throat as a sore throat, but as diphtheria or streptococcus or something else. We do not treat our pneumonias that way, but in order to improve our treatment, we will have to get at it from an etiological point of view, and treat the streptococcic or pneumococcic infection, or whatever the type. In that way we may hope to improve our treatment. Until we get that point of view, we will not do so very much.

Bronchopneumonia in childhood is very rarely, if ever, a primary thing. We have it as a sequence of various conditions—measles and whooping cough perhaps forming the most common of the forerunners. We have also a large group of terminal pneumonias in childhood and infancy, as with the aged, and for the same reason. A large part of the death rate in marasmic infants is due to a terminal bronchopneumonia. Our bronchopneumonia is a progressive thing, a large part of which we can prevent if we will begin at the beginning of its march of progress. We can follow it oftentimes from a beginning rhinitis.

The children in our hospital used to be divided into our orthopedic and surgical and pediatric groups. That has been changed due to this condition: A child on the orthopedic service would get a "head cold". The orthopedists probably ordered some nasal drops. The cold perhaps would lead to a bronchopneumonia and consultation would then be asked. We have changed this so that every child is a medical case, no matter if he comes in for a broken leg. The medical attendant has nothing to do with the broken leg, but his service is that of a consultant, and every child is viewed from a medical point of view as well as for his particular ailment.

Our old system is like the man said: "These darned specialists look through a keyhole and see there is fur, and don't know whether it is a cat or a billy goat!"

That has been the trouble in the past. We get this condition progressing from tracheitis or bronchitis. We find definite consolidation in a definite area of the lung, and come back in twenty-four hours to find it cleared up, and the same condition existing in an entirely different part of the same lung, or on the other side. This is probably more true in childhood than in the adult on account of the structure of the lung. If we will stop to think and remember the framework forms a much larger portion of the lung tissue than the alveolar in the child, which gives definite physical signs which are easily understood if we remember the anatomy of the chest. These bronchioles are easily blocked with plugs of mucous which come out, and another plug forms somewhere else. That is why we get more shifting in the child than in the grown-up.

The outcome of our pneumonia depends on three things: (1) What the invading organism is; (2) the virility of the separate strain of that organism; and (3), the degree of immunity of the host to the organism producing the infection.

The lack of specific treatment in pneumonia has given an endless lot of methods of treatment and drugs to be employed in treating this disease.

The thing we try to accomplish first of all is to rest the patient as far as possible. The most important thing in the treatment of pneumonia is not to overtreat. Do as little for the patient as you can that will disturb him. Permit him to have as nearly absolute rest as possible. Conserve his strength as much as possible and exert him as little as possible. We hold our toxemia down as low as we can.

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*Lecture given, by invitation, before the annual meeting, Nebraska State Medical Association, Lincoln, May 10-12, 1927.

Second, we are constantly on the alert to support the circulatory system. I have seen few deaths in pneumonia I did not feel were circulatory failures, secondary to a generalized toxemia.

The third endeavor is to prevent complications. We have almost any sort one can imagine. We may have an empyema, pancreatitis, pyelitis, nephritis, mastoiditis, or an infection almost anywhere. The thing to emphasize is to start early. If we can jump the gun on the thing, we have a 50 per cent start.

So far as saving the patient's strength and keeping from wearing him out, I do not know of any one thing that we have found of more value with children than inhalations of steam. The drug I like as well as anything for this purpose is compound tincture of benzoin with fifteen grains of menthol to the ounce, steaming in boiling water.

Last fall we had a new supervisor. We have a large balcony for the children which we can ventilate and regulate quite easily. I have been so insistent on the steaming, she got the idea she would have to steam them a lot. She kept the steam going for twenty-four hours straight through a misunderstanding, and it is the best result we have had. We had one lobar pneumonia which did not respond like the others. We moved him out, and have increased our steaming period since that time. There was not another case that did not show a marked drop in temperature and in the respiratory rate. The general condition of the children was better. I do not think we had been steaming them enough before.

In talking to the older children, it is common to have them tell me it feels like a weight on their chest. That seems to wear them out more than anything else. The steaming seems to relieve that condition better than anything we have found to use.

There is a good deal of variance of opinion as to the effectiveness of mustard plasters. Personally, I like and use them three or four times a day. I take about one part mustard and two parts flour. I take the white of an egg and warm water and make a paste and spread it from the neck to the navel, covering the front half of the chest, and immediately follow and cover the back, using the same plaster front and back. We put a little oil on the skin before we apply the plaster, and get the skin as red as we feel it can be gotten within reasonable limits. To get it pink means you have annoyed the patient and done no good. To get it red seems to give relief. I have my ideas as to why it may help. I use these mustard plasters three or four times a day if the skin will clear up enough between times so that we can make our next application.

Baths I do not use. I do not condemn them. An ice bag to the head in extreme temperatures helps to relieve the patient.

The air requirement in bronchial and lobar pneumonia I know is different. We do not need the whole out of doors for bronchopneumonia. We aim to keep the air fresh and nothing more than that. Cold outdoor air is distinctly detrimental to children with bronchopneumonia. It increases the irritation and makes the mucous more tenacious, and they do not do so well. Sensible ventilation with plenty of steam in the air has given us much better results.

Now we come to drugs. There are not very many that have not been recommended for the treatment of pneumonia. I will mention mercurochrome with intravenous injections which I have seen used. I do not expect to take up its use. Quinine we do not use, although it apparently has a good deal of value in the hands of some men. I want to condemn the general use of opiates in pneumonias in children, particularly in bronchopneumonias, which is what most of them are. The reason for giving codein and morphine of course is to stop a wearing cough. I am still looking for one I cannot control with steam inhalations. After I find him and he hasn't a lot of loose mucous, I may be willing to use codein. I can control these cases quite satisfactorily with steam inhalations by soothing the mucous membranes and softening and loosening the tough plugs in the bronchi, which give us more trouble than any other part of the pathology.

If I were to use just one drug, it would be whiskey. I have seen it do so much. In the first place, it gives the patient a state of comfort and peace and quiet and restfulness, if given in proper dosage, you do not get with anything else. It gives vaso-dilation which I think has a value, and possibly acts as a cardiac stimulant. Pneumonias do remarkably well with well regulated doses of whiskey. I use it with all of mine, and think it is one of the best drugs we have.

Creosote carbonate is another drug that has given me a good deal of help. We have checked our cases side by side. We have a standard mixture which we follow—those with and without the creosote. Creosote carbonate is in our hands a valuable help in our bronchopneumonias. Beechwood creosote won't do. Children won't retain it in any way we have been able to make it up. Creosote carbonate does not irritate the stomach. If well mixed with acacia it is well tolerated over a long period of days.

Atropin sulphate or belladonna, I think, has value where we get too much secretion, as we can cut it somewhat. We use it oftentimes.

As to expectorants, there is a good deal of question whether or not they are valuable, and whether or not sometimes they do not do actual harm. We use them sometimes, and many times we get along without. We use iodides and ammonia. I like ammonium hypophosphite in syrup form. Cardiac stimulants are important. We use strophanthus and digitalis as our agents. I do not mean we give all our cases that. We try to anticipate a slump in the circulatory system. A great many never get it. For an emergency cardiac stimulant we use comphor in oil, caffein, strychnine, and adrenalin.

I have never seen a case of pneumonia saved with oxygen. It is a grandstand play to keep the patient going and it makes an impression on the family; but I have never seen it do anything more than that for us. When we have had to fall back on oxygen, the patient ultimately died.

Alpha-lobelin we have used without startling results. When the patient has got to the place he requires oxygen or alpha-lobelin, we have lost the battle. We are through. That is a last effort, which, to my mind, has never accomplished anything.

Diathermy we have never used. I do not know a thing about it.

As for food, I tell the mothers and nurses I do not care whether the patient eats or not. Give him fluids, and let him follow his inclination as to food. Give him something which is easily handled and nutritious, similar to the diet advocated by Coleman in typhoid, which will not tax him to handle, and will give him as much food value as we can expect out of a definite amount of bulk.

That brings me to serums, which are pretty nearly as numerous as are the drugs. The outstanding ones are the antipneumococcic serums, types one, two, and three, and the antibody mixture put out by Mulford, etc. We started in 1921 to work on an idea in the way of serum. We found after we had gotten started that Bull and McKee at Johns Hopkins had already determined that normal chicken serum had present in it specific antibodies to each of the three types of pneumococcus. They were able to salt out the immune bodies to any one of the three types, after which the normal chicken serum still retained the immune bodies to the other types, but gave no further protection against the type salted out.

We checked this up and as a matter of interest, also checked the protective power of some of the other serums in animals against pneumococcus infection of each type.

I have put in a few slides to show what we were able to find along this line.

SUMMARY

Most commonly pneumonia in infancy and childhood is broncho-pneumonia. Very often this is a sequela of pertussis, measles, etc. Very often also in athreptic infants it is a terminal affair similar to terminal pneumonia in the aged.

Broncho-pneumonia in childhood is usually a progressive condition; often it may be traced from a rhinitis, to a tracheitis, to a bronchitis, to a capillary bronchitis or broncho-pneumonia.

Our mortality in pneumonia in childhood remains practically unchanged during the last thirty years, nor is it likely to improve until we begin treating our cases for the specific infection which produces the disease rather than the symptoms produced by the infection, as we have always done. The outcome depends: First, on the type of organism producing the infection; second, the virility of this particular strain; third, the degree of resistance of the host to the particular strain of organism producing the infection.

In the absence of specific therapy our aim should be: First, as near absolute rest as possible; second, support to the circulatory system at the first sign of lagging; third, guard against complications.

A multitude of drugs has been suggested, each with its advocates, many with value, none specific. I do not believe there is ever a time when narcotics may be wisely included in our pneumonia treatment. Fluids in large amounts are essential.

Normal chicken serum, when fresh, is specific to the three types of pneumococcus infection. This specificity is lost through aging. We found a high degree of protection against the Type I pneumococcus infection by Type I and polyvalent anti-pneumococcic serums. This was not present in either serum to the other types. Other serums tested give practically no protection to any of the types.

—1811 Federal Reserve Bank Bldg.

"Water, according to a medical writer, is the only drink of which one never gets tired. This is corroborated by a Scotchman we know of, who has made a life-long practice of putting a drop or two of it in his whiskey."

SYMPOSIUM ON GALLBLADDER DISEASE*

(Continued from September Number)

DISCUSSION

MAX EMMERT, M. D., (Omaha): This symposium has not only been highly entertaining, but very instructive. There are many points I should like to discuss, but in the absence of Dr. Dent, I will make a few remarks relative to the surgical treatment.

Until fifteen years ago, the common operation was cholecystotomy and drainage. As a result of this treatment, or as the failure of this treatment to obtain satisfactory results, the operation of cholecystotomy and drainage. As a result of this treatment, or as the failure of this treatment to obtain satisfactory results, the operation of cholecystostomy was devised, and it is the popular operation for either chololiths or chololithiasis.

There are two points relative to the operation of cholecystostomy I wish to mention. I have observed in I think the majority of cases that there is a relatively large vein passing between the liver and the gallbladder. If this vein is found and tied, there is very little post-operative bleeding from the site of the gallbladder. If it is not, we get considerable oozing as a result from the raw surface, and especially this vein. I think the most vital point regarding cholecystectomy is the advisability of closing the abdomen without drainage. This is a question which is hooted and denounced, especially among the older group of surgeons. But there is no reason except in cases of excessive oozing for drainage at all after cholecystectomy.

The vast majority of cases after the gallbladder is removed are dry in a very few minutes, providing the proper hemostasis has been secured with your main arteries at the neck of the gallbladder, and this little vein.

One of the theories and plans of recent age was the closure of the raw surface following cholecystectomy. I believe this is absolutely unnecessary, because you will recall that with the retraction of the liver following cholecystectomy its raw surface is placed beyond contact with the jejunum and other viscera, and will heal kindly without trouble. And failure to use drainage, or in the absence of drainage following cholecystectomy, we get completely away from post-operative complications as indicated with adhesions. That is one of the things we must look out for in all abdominal operations.

B. B. DAVIS, M. D., (Omaha): Dr. Emmert followed me this morning, and I will follow him this afternoon.

These papers to me have been very interesting, and I have not any especial criticism to make of anything that has been said. I thoroughly agree with Dr. Fouts in regard to x-ray diagnosis, and our experience has been very much the same as his with the Graham-Cole test. It worked remarkably well.

I want to compliment my friend Fordyce on his moderation of claims in regard to medical treatment. I believe there is a place for medical treatment, and especially is this true in early cases not associated with severe symptoms. I think many of those might be tided along and possibly would never have sufficient symptoms to call for anything in the way of surgery.

There are two or three points I want to talk to. Dr. Bell's discussion of etiology and pathology was intensely interesting, and in the main, there is nothing from which I can disagree. I think he is absolutely correct in almost every statement he made. There is one point with reference to the etiology I have rather strong ideas about, and that is in the manner which it originates—the ascending type. You can inject into the gallbladder with a hypodermic syringe all of these different microorganisms until the cows come home, and you won't get a cholelithiasis. Once in a great while you get a little infection at the point where the needle goes in, but I do not believe you can get an infection of the gallbladder from the presence of microorganisms in its lumen unless you have an abrasion or some point of lesser resistance. Therefore, I do not believe the ascending type of infection occurs in any cases except possibly these.

The doctor spoke of the cholesterol stones which occur without infection. I can imagine in some way one of those may traumatize the wall of the gallbladder sufficiently to produce a point to set up infection.

In the matter of etiology, we must confine ourselves to two points. One is the hematogenous infection which is present in infections all over the body. We may dismiss without argument that hematogenous infection is one of the types to be expected in a good many of the cases. But I have felt the present generation has not given sufficient consideration and weight to Graham's ideas with reference to infection through the portal vein to the liver, and possibly by the lymphatics to the gallbladder wall. I think every surgeon will back me up in this. I believe in 75 per cent of the cases of gallbladder infection or gallstones I have operated, there has either been a diseased appendix which called for operation done two to ten years before, or we find an infected appendix, or a condition of adhesions which shows there has been an infected appendix at some time. It seems to be an etiological factor that from the appendix through the portal vein to the liver—not through the bile ducts, but the lymphatics which anastomose with the lymphatics of the gallbladder—is the manner in which many of the infections occur, and is a bigger factor than ordinary hematogenous infection.

With reference to hepatitis, I have a feeling from quite a considerable experience with gallbladder surgery, that there is a definite hepatitis in cases of cholecystitis. I find it is of assistance when examining a case when I do not find stones in the gallbladder, I find a gallbladder probably that has some greyish or whitish areas, and a part of the color is right. If I find this fibrous tissue in the region of the gallbladder, I have come to the point I look upon that of itself as sufficient argument in favor of their being a chololithiasis present to remove the gallbladder. It is true a great majority of these cases are seemingly cured by this procedure. We do not cure all.

Forty to fifty is about the time we get them for operation, but I believe the origin of these cases is usually many years sooner; and when you go into the history minutely, you will find they had belching and a lot of ordinary symptoms from five to thirty years preceding the time of their operation. So the age when they start should be considerably less than from forty to fifty.

Speaking about extremes of age, something over twenty years ago I was called to see a little girl four years old with a severe abdominal condition. I do not know what I thought it was. I made an incision and found she had four stones, one of them half through the gallbladder wall. Fortunately adhesions had formed so that you did not get general spread of the infection. Less than a year ago, her doctor told me she is perfectly strong and well. That is the youngest case I have ever run across with gallstones and cholelithiasis.

Just a word about the origin of the infections. Dr. Bell brought it out nicely. It is not, as a rule, a mucous membrane infection I think the latter get well in many of the cases, but the infections that make it necessary to do a cholecystectomy in order to cure are the ones in the lower, more particularly the perineal covering, and to same extent the muscular. I have had two hundred cases where I have had to do a cholecystectomy on patients which had had a cholecystotomy done previously without relief.

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*This is a discussion of Symposium on Gallbladder Disease, read before the annual meeting, Nebraska State Medical association, Lincoln, Nehr., May 11-13, 1927, and published in the September, 1927, Journal.

I thank you.

CLYDE ROEDER, M. D., (Omaha): I wish to take this opportunity of expressing my appreciation to Dr. Bell and the others who have participated in this Symposium.

The gallbladder is still mysterious enough in its normal and diseased states to warrant frequent discussions. It might be interesting to know that the first man who proved a connection between the portal blood stream and the hepatic lymphatic system was a German investigator in 1860. He injected methylene blue into the portal vein and found it coming through the lymphatics of the liver. The importance of this observation was not appreciated at that time.

At a recent meeting of the American Association of Anatomists last month at Memphis, it was shown the sphincter of Oddi was a broad band about a half inch in width in the dog. This investigator amputated the common duct just above the duodenum and reimplanted it into the duodenum with retentive function.

An important observation is the presence of bile in the sclera. Most of these cases of mild jaundice are not due to destruction of the common duct, but to a hepatitis of the smallest biliary ducts. We now think that a good proportion of the bile is made in the reticulo-endothelial system, part of which is in the liver and the rest in the spleen, lymphatic nodes and bone marrow. If the liver is removed the animal becomes jaundiced, indicating an extra-hepatic origin of bile.

During a clinical examination it is easy to elucidate tenderness over the gallbladder, particularly if you want an operation. I have often wondered how many times we really come in contact with the gallbladder with our fingers during deep inspiration. The tenderness we elicit is generally from the liver. I have checked this carefully before and during the operation and I have noted that in those cases in which we have the most marked tenderness the gallbladder was completely covered by the liver.

Relative to the surgical treatment of diseased gallbladder, I am inclined to feel that when stones are present and the walls of the gallbladder thin and normal in appearance, cholecystostomy is the operation. When stones are not present in a patient with a gallbladder syndrome, the operation of cholecystectomy is indicated.

H. J. LEHNHOFF, M. D., (Lincoln): I do not think this discussion should be entirely on the part of the surgeons. I want to represent Dr. Fordyce's clan.

Dr. Bell cited the fact of those cases of cholecystitis we have about 85 per cent which contain stones. Now I believe it is fair to say you can look over any hospital record of those cases operated on for gallbladder disease, and you will find the number in which gallstones were present is less than 85 per cent. So either those statistics of Dr. Bell's are wrong—which I hardly believe—or we are away off on our diagnosis. I am dropping that hint. The cases we operate for gallbladder disease in hospitals any hospital record will bear out are not 85 per cent gallstones.

As far as my personal experience is concerned, the difficulty with diagnosis of gallbladder disease is not in those cases in which pronounced gallbladder colic occurs. As a rule, those cases are not so difficult to diagnosis. A lot of them are. The case that disturbs me is the chronic case that comes to my office with a so-called dyspepsia or indigestion—two terms the physician should not use without qualification, because there is not any such thing—the patient who comes for certain stomach symptoms of which the most common are accumulations of gas, and weight in the stomach following the taking of food that does not go on, and symptoms of that kind, not of pronounced colic. Now, it is that class of cases that complains of those minor symptoms is difficult to diagnose.

After you have pretty well ruled out the other stomach things like cancer and ulcer—the latter not so easily ruled out—and some of the other common things, then what are you going to do with that class of cases you think are gallbladder cases, but who do not have gallstones? I think that class of case is very hard to diagnose in a lot of instances.

To go to the next point, and that is when you have diagnosed twenty cases as cholecystitis with stones, and you are not a surgeon, what are you going to advise those patients to do? How many will you advise to have operations, as well as the chronic cases without stones?

The first point: In my twenty-five years of medical practice, of those chronic gallbladder cases—supposedly so, and I do not doubt a lot of them are—I have only had one who died who was not operated, and I am not sure he died from the gallbladder trouble. Any hospital will admit its mortality is higher than that from those operated without stones.

There is another point. To remove a gallbladder, as somebody has said, is far from curing a patient. You know, as the doctor said, you do not expect the patient to get well for about a year. All of you know you have a lot of returns of gallbladder cases, noncalculus, operated on for either removal or drainage—and most of them are removed now. These are points I think well to remember.

Why should we remove a gallbladder that is infected? It has been said it was not a focus of infection. Several years ago we thought we got certain heart lesions from those chronic gallbladder things. That is questionable. Those patients who die after operations on the gallbladder without stones, unless their myocardium was particularly pathologic, do not die as a result of infection from the gallbladder. Patients who go on with chronic cystitis without stones and get better and produce the picture produced here today to my mind are just as well off as those who have their gallbladders removed. It is true chronic gallbladder does aid in the formation of stones. If this does not occur, they are just as well off as those patients with their gallbladders removed.

I can hardly agree with the surgeon that removal of the gallbladder does not interfere more or less with the gastro-intestinal function after it is removed. I think it interferes quite a good deal.

DAISY M. HANSON, M. D., (Lincoln): I want to ask as to the action of tetraiodine. I am a little afraid of it. I had it given to one of my patients intravenously some time ago, and the person showed us the blood which he brought back was coagulated, which scared me, and I have not advised any more patients to use it that way. We have used it several times by mouth, but we would have very definite symptoms afterward, especially of nervousness and forebodings of danger. I wonder if the drug is very depressing?

DR. BELL, (closing): There are a few points I might discuss a little further. First, the question raised by Dr. Davis as to the relation between appendicitis and disease of the gallbladder: Just how marked that relation is depends on what you call appendicitis. If you are going to take a real definite appendicitis such as a pathologist would call a diseased appendix, its relationship to the cholecystitis is not striking. These figures of high incidence of appendicitis with cholecystitis came from sources where trivial things are called appendicitis, such as an obliterated appendix, which, personally, I do not think causes symptoms; or an adherent appendix. Something you find in postmortems with no symptoms cannot be considered an appendiceal condition. Adhesions run 40 per cent on adults, and an obliterated appendix around 50 per cent. The great bulk of those people have no history of appendicitis. If you use that as an index of appendicitis and take out both appendix and gallbladder, you can get a high incidence. Some statistics come from sources where the pathologist is trying to please the surgeon. Appendicitis in connection with definite cholecystitis is not a common thing.

With relation to hepatitis: There again we must know what we are talking about before we come to any conclusions. Any time you have true infection of the gallbladder, there is some infection in the liver around the gallbladder bed in a postmortem. Or take out a liver and there is cholecystitis present and there is some extension into the liver. Always he has a localized hepatitis. If you get off some distance into the liver you do not see much of it.

If you call everything hepatitis in which there is round-cell infiltration into the liver, you get a high incidence. Take the postmortem cases of that sort and you come out with 60 per cent of livers showing hepatitis. If that is a criterion, there is very marked association. Simple round-cell infiltration in the liver is too common a postmortem finding to put much emphasis on it. There is always some localized hepatitis with a diseased gallbladder. The fact it is around the liver makes us think it comes from the gallbladder and not the liver. The conclusion you would be tempted to make is that hepatitis is secondary to gallbladder disease and not the cause of it.

As to the origin of the infection: The colon bacillus being the organism found, there is a suggestion it comes from the intestines. How does it get there? As Dr. Davis pointed out, the fact the infection is in the wall indicates it does not come through the duct itself. We have no proof it does. Where we have stasis, it is an easy assumption it might get there that way, just as we get a pyonephritis with an obstruction in the bladder or ureter. That is a well defined thing and there is convincing evidence it comes up through the ureter from stasis.

The point of origin being in the wall looks as though it came from the lymphatics or blood stream. There is some theoretic support for that, but not as convincing as we should like to have it.

There is, I think, a very definite relation between cholecystitis and pancreatitis. With acute pancreatitis very commonly you will find gallstones associated. It has become a part of the diagnosis to have repeated attacks of gallstone colic. The infection goes from the gallbladder to the pancreas. Here it goes up the pancreatic duct. That there is a relation we cannot deny. The gallbladder can be seen to contract if you operate on an animal under local anesthesia. Dr. Mann showed if you use a local anesthetic you can see it contract.

As to the point raised by Dr. Lehnhoff as to the frequency of stones: Those statistics are taken from the pathologists' records. It is called cholecystitis when the pathologists said it was. That might account for the high frequency of stones. Dr. Blaylock of Baltimore in a survey of ten years gives about that proportion, accepting the diagnoses made by the pathologists. Perhaps they are not generous enough in diagnosing cholecystitis, but I think all surgeons know they sometimes take out gallbladders not convincing examples of cholecystitis. In my own experience, it is somewhere around 80 per cent of undoubted cholecystitis has stones in it.

DR. FOUTS, (closing): Answering the question as to the toxicity of the salt: It is not as depressing as tetrabromine and for that reason we are now using the tetraiodine salt. When given intravenously, occasionally we get an unfavorable reaction and our workers are after getting somthing administered by mouth. So far as I know from my own experience, I have never observed any particular depressing effect or anything other than gastric irritation and nausea and vomiting. That has been confined solely to tetraiodine salt.

DR. FORDYCE, (closing): Just one point that was not mentioned in my paper, and that is the effect of disease on the patient himself. He is apt to be subjected to very severe apprehension of oncoming attacks. We can allay his sensation by means of belladonna and bromides, and probably thereby ward off an attack.

ECONOMICS OF THE PRACTICE OF SURGERY

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In the May number of The Nebraska State Medical Journal appears an article, "A Menace of Modern Surgery", by Dr. G. O. Remy, of Ainsworth, Nebraska. In this article a rather severe indictment against the practice of surgery as generally carried out today would appear to be worthy of criticism,—constructive criticism. The doctor, acknowledging the wonderful progress of modern medicine in general since the discovery of the germ theory of disease, and the great changes that have followed in consequence of Lister's application of Pasteur's discoveries, has nothing but appreciation of the educated, trained and skilled surgeon. He criticises the disparity between the glamor of the preparation for and the carrying-out of a modern surgical operation, and the lack of all this in the practice of the internist. It is not, he says, a true index of the comparative worth of the work, both as to its importance to the patient and the amount of knowledge required.

Doctor Remy says "There is another lure, stronger perhaps than the lure of vanity, which is active in drawing young men into the field of operative surgery. It is the lure of the Almighty dollar". He emphasizes the unfair differences in fees received by surgeons for operations, many of which require no extra ability or skill, as compared with those of internists in the proper conduct of an obstetrical case, one of pneumonia, or of typhoid fever. Certainly it must be agreed with him that much of the work of the internist is as valuable, or more so than that of the surgeon,—often it is the internist whose skill in diagnosis is the protection of the patient from an unnecessary or undesirable surgical operation; his knowledge of appropriate treatment may be the saving element in the conduct of a case. For instance, in the recognition of an "acute abdomen", a perforated duodenal ulcer for example, the physician who makes such a diagnosis, insisting upon the patient being operated upon with as little delay as possible, summoning a surgeon or taking him to a hospital sometimes many miles away, should have proper credit for his services and should be paid accordingly, and if there is any ready money he should have a liberal share, and the patient and family should be made to know that their doctor deserves his share of the credit and of the fee. It is a lack of this fair recognition of the intelligence and skill of the family physician that has drawn too many of them into attempting surgery after poor preparation; it has drawn others lacking moral stamina into being cappers, runners, secret fee-splitting procurers for commercial surgeons.

A surgeon should not take all of the cash at hand when associated in a case with a physician who has done a proportionate share of the work; the physician should not be asked to wait months, a year, perhaps, for a pittance. Every man knows when he is honest; there should be no secrets kept from the patient or his family about the payment for services. Beware of the physician who wants to collect the surgical fee, i. e., hire the surgeon. Example: A well-known Council Bluffs surgeon did an abdominal operation in a neighboring town; the attending physician gave him to understand that the patient could pay only a moderate fee of $100 and that he would collect this amount and send a check; he did so. About one year later the surgeon met a member of the patient's family who said that he himself needed an operation but could not afford to have him do it. It developed that the physician had collected $400.00 as the surgeon's fee, sent him $100.00, and pocketed the $300.00. Those who know the Council Bluffs surgeon may surmise what happened. I know of a number of such instances,—one in particular, much worse, perpetrated upon a nationally known man, an ex-President of the American Medical Association, and I have been stung myself.

There is no question but that many men, illy fitted by education, refinement, and appreciation of the sacredness of human life,—let us hope ignorantly,— sacrifice it because of vanity, avarice, ambition, and lack of conscience,—there is something wrong in their make-up. These men are doing operative surgery throughout the country. There are about 25,000 men doing surgery in the United States, and we have the opinion, gathered, it is said, from the experience of the Rochester Clinic, that only about 10,000 are really competent. In confirmation of this let us see what the Bureau of Vital Statistics has to show: The increase in death rate from 1905 to 1922 in goitre is 250%; in gallstone (gallbladder and duct infections), 77%; ulcer, stomach and duodenum, 72%; appendicitis, 31%. These are startling figures but everybody who is in touch with the Times is not surprised. Because a comparatively few exceptionally skilled men may do these operations with a very low mortality is no reason why the man illy-trained or inexperienced can do likewise. There is another type of very unsafe man whose mortality is always high: The man deft with his fingers and instruments, self-confident, a good salesman without discriminating judgment; one who cares less for his high mortality than for the effect it may have upon his "business". A man may be a skillful carpenter and joiner but have poor knowledge of different kinds of wood; he may not be able to appreciate sufficiently the difference between the resistance and wearing qualities of a good hard wood and a softer one, perhaps wormy.

The College of Surgeons is doing much to raise the standard of those who wish to practice the specialties of the surgical art, and in time it is to be hoped that only those who have served an apprenticeship recognized by some standard, will be allowed to call themselves specialists. The public will then be protected against the pretenders.

In Nebraska towns having a population below 2,000 there are listed by the American Medical Association over forty having hospitals (six to ten beds) under the ownership or patronage of local doctors, not one of whom is a member of the American College of Surgeons, or Physicians. There are many others of a like kind not listed. These hospitals are no doubt doing much good or they could not long exist. Too many of the owners, however, are not sufficiently interested in progressive medicine to hold membership in our State Association. An effort should be made to enlist them into the fold of this splendid organization where good fellowship and earnest work go hand in hand.

The development of group medicine and private clinics is creating considerable interest. The movement is doing good in one direction if no other,—it is teaching doctors business methods and habits; it is educating the public that professional services must be paid for, and promptly, too. The profession will always give willingly and generously of its time and knowledge to the unfortunate and sick poor, but from others they should demand and collect a just and equable fee for services rendered. The maintenance of a group clinic properly equipped cannot be carried on unless it is conducted on business principles as is any other business. Medicine is becoming a business. No longer are all the tenets of the Hippocratic Oath, other than that of personal morality in the relations of patient and doctor, possible of being carried out. The confidential relationships between doctor and patient are now typed on the hospital record; monthly meetings of Staffs discuss,—even the name of the patient being read,—the many interesting or too inquisitive facts in the lives of our former trustful and confiding patients, and they are made a matter of too public history. There is something wrong about this; it may go in public charitable organizations in order to protect the tax-payer against fraud, but for those who give us their confidence it is unworthy of our calling. There are weaknesses and skeletons in the personal and family histories of the best of our citizenship, and its privacy should be respected. The trusted family physician, the general practitioner, will always be the back-bone of our calling,—he is the patient's friend. Another reason for the formation of so many group clinics (there are some 296 in the United States) is that of the fact that labor can be so divided and arranged that members of the group can each have time for vacations and study away from home without the complete cessation of income during the absence. A few of these clinics, well financed and equipped, following the lead of Rochester, Minn., are becoming post-graduate teaching institutions, and are making strong efforts in that direction. The vast majority of groups, however, are purely business organizations. In each group is always found one, or several, strong, dominating characters; their associates are often of mediocre calibre, but in time the weaklings will be weeded out and stronger men take their places. There is a noticeable tendency for the different groups to seek favorable publicity in a way that the members would not venture to do as personalities,—the clinic seems to enjoy a license. The establishment of group clinics composed of members of the staffs of large hospitals is a difficult matter. To date little further in that direction has been accomplished than the formation of group cliques. These cliques are formed among men who are most agreeable to one-another professionally, financially, and socially; in some instances they are "birds of a feather". In the smaller towns and cities of the country community hospitals welcoming the patients, and professional attendance of their own physicians should be encouraged. Private hospitals are, of course, purely business ventures and when non-owners and their patients are welcomed it is only for the purpose of reducing the overhead and the bolstering up of the institution until the owner can establish an independent clientele.

Hospitalization is a convenience to the physician and surgeon. In some instances it is life-saving, but for 75% of patients it is not a necessity; it has become a fad. There are in reality few cases that cannot be treated medically and surgically quite as safely in the home as in the hospital,—often to the advantage of the patient, certainly with a great financial saving, and the comforting knowledge that he is surrounded by those having the greatest interest in his welfare, among them his own family physician.

It has been well questioned, "What is the ethics of labor for the future?" Nobody knows; good men are those who want to know; bad men are those who do not care. So we must settle all this moral question that divides us today, by appeals not to the past, but to the present.

—Bankers' Reserve Life Bldg.

THE PERITONEUM

(Applied Anatomy)

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The peritoneal cavity is the largest serous cavity of the body and its surface area is about equal to that of the body surface. The peritoneum invests certain organs, while others, it is merely in contact on one or more surfaces. Visceral peritoneum is that enclosing organs while parietal peritoneum lines the abdominal cavity. It is a completely closed sac except for the Fallopian tube opening in the female.

The term mesentery is applied to the folds of peritoneum attached from the abdominal wall to the gastro-intestinal tube. The term omentum is applied to folds of peritoneum between the stomach and adjacent organs such as gastro hepatic (lesser) and the gastro colic (greater). The term ligament designates attachments between organs or organ and abdominal wall.

I believe it an impossibility, at least an improbability to understand the relations of the abdominal cavity without some knowledge of the embryology. For simplicity the peritoneal cavity may be considered a long sac and the organs covered or partially covered by peritoneum have pushed in from a posterior position. Thus the primitive gut posteriorly has a mesentery extending through its whole length. Anteriorly there is the ventral mesentery which extends only down to the level of the umbilicus. (Fig. 1). Interposed in this ventral mesentery between this primitive gut (stomach portion) and abdominal wall is the liver. When the liver migrates to the right upper quadrant, that portion of the ventral mesentery between the primitive gut (stomach) and the liver becomes the gastro-hepatic omentum and its free border the boundary of the foramen of Winslow. The common bile duct, portal vein and hepatic artery run in this free border. That portion between the liver and anterior abdominal wall becomes the falciform ligament in the free margin of which runs the round ligament of liver. This latter ligament is the obliterated umbilical vessels.

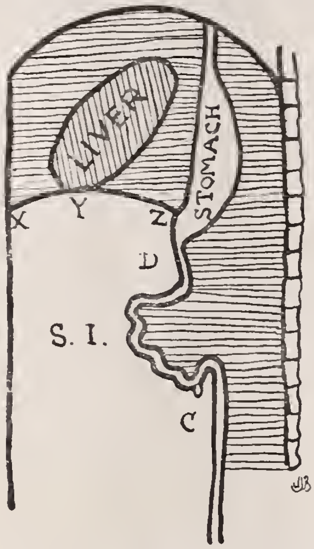

Fig. 1. Dorsal mesentery attached to gastro-intestinal tube. Ventral mesentery with liver extends only to level of umbilicus. Stomach has not rotated. XY becomes the falciform ligament; YZ becomes the gastro-hepatic omentum (lesser). D. duodenum; SI. small intestine; C. colon.

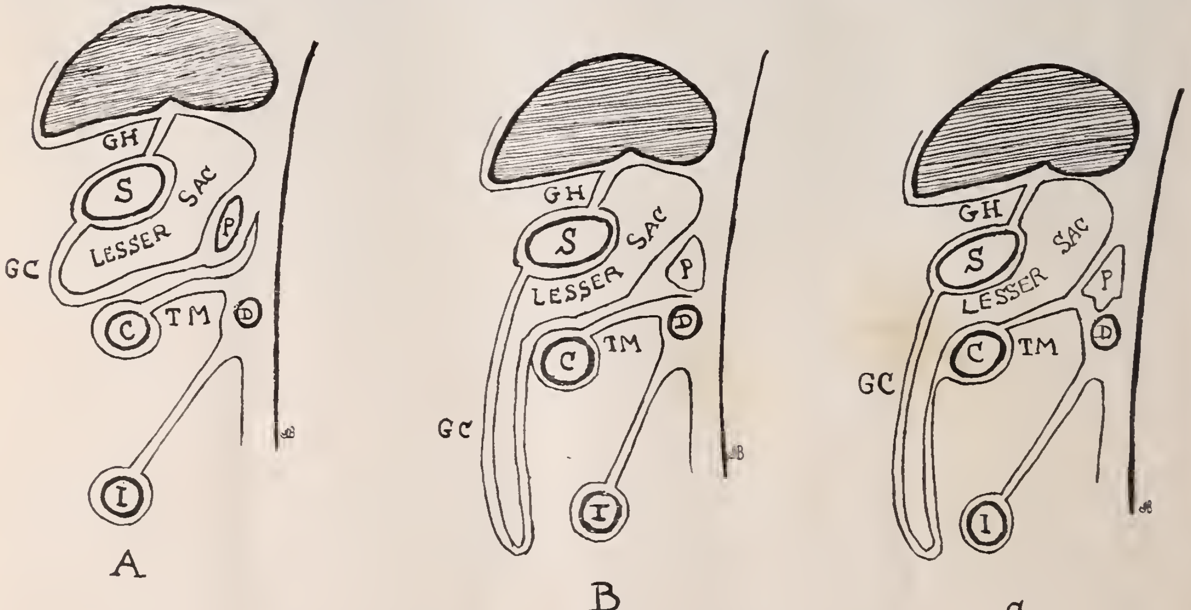

Fig. 2. Development of the gastro-colic (greater) omentum (GC) after stomach has rotated. The redundant fold becomes adherent to the transverse colon. The redundant portions (4 layers) of the gastro-colic omentum usually becomes fused. GH, gastro-hepatic omentum; TM, transverse mesocolon; P, pancreas; D, duodenum; S, stomach; I, small intestine.

The greater omentum is a redundant fold of peritoneum. When the stomach rotated, its posterior wall with posterior mesentery rotated to the left and down and became the greater curvature. The mesentery drops down upon the transverse colon and becomes adherent to it. The mesentery is now called the gastro-colic or greater omentum. (Fig. 2).

The transverse mesocolon suspending the transverse colon divides the peritoneal cavity into supra and infra colic areas. This division is completed by the transverse colon and omentum lying in contact with the ventral abdominal wall. At both the splenic and hepatic flexures the transverse mesocolon becomes so shortened that the colon comes to lie in direct contact with the posterior abdominal wall. With this disappearance of the mesocolon at the flexures, the supra and infra colic compartments communicate. This communication is very small on the left because the splenic flexure lies lateral to the left kidney. On the right side, the hepatic flexure lies in front of the lower and medial part of the kidney. This area just anterior and to the right of the right kidney and below the liver gives a wide communication between the upper and lower parts of the abdomen and is called Morrison's pouch. As the patient lies on his back there is a tendency for it to become the drainage area of the appendix, gallbladder, duodenum and part of the pylorus. Because of this, local tenderness and rigidity in perforation of the duodenum or gallbladder may similate appendicitis.

The supra-colic area is divided into a compartment posterior to the gastro-hepatic (lesser) omentum and an area anterior to it.

Both the supra and infra colic areas are divided into right and left compartments (gutters) by the vertebal column and large blood vessels just anterior to it (Fig. 3). In the infra-colic area this is further completed by the mesentery of the small intestines which runs froms about the second lumbar vertebrae down to the right sacro-iliac joint. Therefore, unless disturbed, drainage material will tend to gravitate to either lumbar gutter where absorption is at its minimum. Instituted drainage of the abdomen should in most cases be an attempt to drain these gutters. With the patient flat upon his back either gutter drains into a lower level above and below, namely, the subdiaphragmatic region and pelvic cavity, thus accounting for such abscesses.

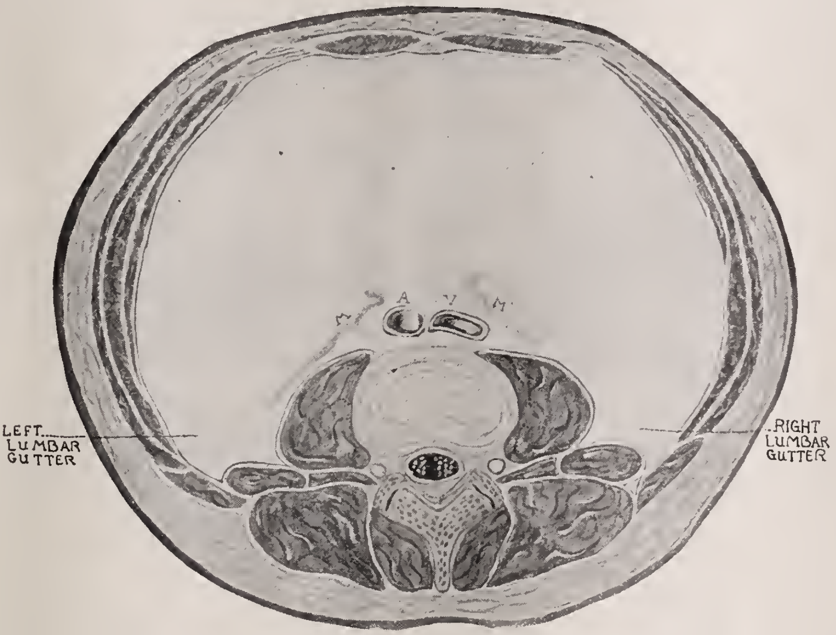

Fig. 3. Cross section through third lumbar vertebrae showing formation of lumbar gutters by the vertebral column, large vessels and mesentery.

Fluids in the peritoneal cavity tend to move toward the diaphragm probably due to its excursions in respiration. Experimental evidence seems to show that the general peritoneal surfaces have little if any capacity for absorption as long as the mesothelium is not destroyed or injured. The omenta readily takes up fluids and even rather large particles and conveys them to the portal circulation while the under surface of the diaphragm allows equally easy egress via the diaphragmatic lymphatic plexus which empties into the lymph channels running on the dorsal and ventral chest walls and emptying through the superior mediastinal nodes into the innominate veins. Drainage from the peritoneal cavity does not take place via the thoracic duct. (Poynter).

The resistance of the peritoneum to infection depends upon the integrity of its mesothelial layer which is lessened by all forms of trauma including handling, sponging or irrigation with strong antiseptics. The prompt exudation with adhesion formation which follows infection and injury is a protective mechanism and often isolates the affected area and prevents fatal diffusion of inflammation. This extreme sensitiveness of the peritoneum is the guarding agent in gastro-intestinal surgery.

Bands and adhesions are frequently encountered in the peritoneal cavity. Some of these are evidence of past inflammation and insults while others are purely developmental although are often seized upon as evidence of a past disease process and as the warranty for the surgical interference. Naturally, some of these developmental bands are mechanical and physiological barriers.

HEMORRHAGE OF THE NEWLY BORN*

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Having recently been called upon to treat a rather severe case of gastro-intestinal hemorrhage in an infant of two days of age, my attention has been called especially to this subject and believing that it might be of some practical benefit to others, particularly to the general practitioner, I am, therefore, with your permission, presenting the subject of *Hemmorrhage of the Newly Born* for your consideration.

HISTORY OF THE CASE

On March 22, 1927, I was called to the country to confine a multipara already in labor. There was nothing unusual about the labor except that it was somewhat protracted and difficult but natural, as no forceps or pituitary extract were used. Chloroform was given just before the termination of the second stage of labor. The first cry of the eight pound baby girl was natural. However, the baby was very cyanotic and the pulse somewhat accelerated. Before leaving the case I instructed the nurse to watch the baby closely and report any unfavorable change.

On my visit the second day the pulse was slower and stronger and the cyanosis mostly gone. The baby had developed a slight diarrhea, some mucous and blood. Three grains of calcium lactate were ordered given every two hours. On the evening of that same day I was called to hurry out to see the baby because of a severe hemorrhage from the bowels. On arrival I found the baby's napkin saturated with several ounces of bright red clotted blood. The baby was pale, limp, motionless. While the nurse prepared and gave a normal salt solution by bowel, I drew some blood from the father's arm, coagulated it and injected an ounce of the human serum into the baby's gluteal muscles. No more blood passed until the next night when another very severe hemorrhage occurred. This affected the baby even worse than the first hemorrhage. The baby was now white, perfectly limp, exhausted and in a state of collapse.. This time an ounce or more of the whole blood from the father was given immediately to the baby. No time was lost as a rather large needle was used on a 50 cc. Luer syringe and the whole blood given before it had time to coagulate. The baby was so lifeless that when this injection was given it did not move a muscle. Complete absorption soon took place, no complications or reactions resulted. There were no more hemorrhages and the baby from this time on slowly and steadily recovered. Marked improvement followed both treatments and especially the last one.

On questioning the nurse, I found that before the passage of blood the baby had become restless, hiccoughed, and vomited blood shortly before the spontaneous hemorrhage from the bowel. The most striking things about this case were the very rapid change from an apparently healthy baby to a very acutely ill baby and the very sudden loss of weight, its weight disappearing as if by magic. It is now a little over three months old and is apparently normal in every respect.

This subject of hemorrhage of the newly born I have developed according to the following outline: Frequency, Sites of Hemorrhage, Classification, Etiology, Symptoms, Diagnosis, Prognosis and Treatment.

FREQUENCY

Hemorrhagic disease of the new born is more frequent than is generally supposed. Statistics vary from .6% in 5225 cases in the Boston Lying-in Asylum to 8% in 740 infants (Epstein) at the Foundling Asylum at Prague; Weyhe reported 12% in 950 necropsies, Warwick reported 50% in 36 fatal cases and Parriot 76% in 34 cases(1).

Abt and Pearce state that a tendency to spontaneous and prolonged hemorrhage is often seen in the infant during the first few days after birth. It may be limited to one organ or part or may be very general in character, involving the skin, mucous membranes, meninges and parenchymatous organs.

Holt also states that hemorrhages are quite frequent during the first days of life.

SITES OF HEMORRHAGE

Some of the sites of hemorrhage are the stomach, bowels, brain, meninges, skin, liver, lungs, pleura, pericardium, spleen, kidneys, conjunctiva, ears, nose, mouth and genitals.

CLASSIFICATION

In their paper, "Hemorrhage of the New Born", Clarke and Dow give Schloss and Commiskey's classification of the new born as follows:

1st. Traumatic: From obstetrical or surgical procedure.

2nd. Accidental: Illustrated by insecure tying of the cord.

3rd. Spontaneous: Without apparent cause, which may be subdivided into: (a) Symptomatic; incidental to diseases as sepsis, congenital lues, or in offspring of families showing hemophilia. (b) Idiopathic. Cases showing a prolonged blood coagulation and bleeding time(2).

Holt and Howland classify it as:

1st. Traumatic or accidental hemorrhages which depend upon causes connected with delivery;

2nd. Spontaneous hemorrhages or the hemorrhagic disease of the newly born(3).

A more simple classification as given by the Children's Clinic of Lincoln is:

1st. Typical hemorrhagic disease in the new born.

2nd. Intra-cranial hemorrhage(4).

ETIOLOGY

I shall quote from a number of authors concerning the causes of hemorrhage in the new born:

Holt and Howland state that there are several conditions in the newly born which predispose to bleeding: (a) The extreme delicacy of the blood vessels, and the great change taking place in the blood itself and in the circulation in the transition from intra-uterine to extra-uterine life; (b) certain diseases of the early days of life, such as syphilis or sepsis, or (c) hemorrhages may exist alone(3).

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*Read before the Cedar, Dixon, Dakota, Thurston and Wayne Counties Medical Society, Emerson, June 23, 1927.

Warwick says that the condition is brought about by trauma in normal or rapid deliveries, by congestion or asphyxiation in slow deliveries, or by disease of the child itself(5).

Dun remarks that cerebral hemorrhage is caused by injury during parturition(6).

DeLee says that prolonged natural labor is the most potent cause of the trouble as congestion and asphyxia result from pressure before birth in difficult labors. He calls attention to the fact that prolonged natural labor affects the baby similar to certain traumatisms or conditions that produce caisson disease. The child is under pressure throughout the whole labor and has suffered from asphyxia and when the head is born that part is relieved of pressure and as a result the blood is forced into the brain with increased power, resulting, if the blood vessels of the brain are damaged, in minute or larger hemorrhages. The use of pituitary extract, at least its unwise use, is another cause, as it tends to increase asphyxiation in the baby. Both acute and chronic asphyxia from prolonged labor result in a degeneration of the delicate blood vessels and help to produce the hemorrhagic diathesis of the new born(7).

Effa Davis tells us that toxemia and eclampsia predispose to bleeding by making the blood vessels more friable and unfit for the extra strain of labor(8).

Kerley says that the role of bacteria has received the greatest consideration, for the following reasons:

1. The close similarity between these conditions and the picture produced by naval sepsis.
2. The epidemicity of at least one group (Winckel's disease).
3. The finding of organisms at autopsy.
4. The experimental production in animals of certain of these conditions by inoculation with bacteria(9). Gaertner and Mapes described a special bacillus which causes hemorrhage but in addition to this such micro-organisms as staphylococci, streptococci, pyocyaneus and colon bacilli have been found at autopsy.

Some writers give prematurity as a cause, especially when it results from lues.

Kerley calls our attention to the fact that intoxication by such chemicals as phosphorus, arsenic, potassium chlorate and chloroform simulates the disease under discussion.

Some authors believe that like Buhl's and Winckel's diseases this condition is acquired during the last few days of intra-uterine life but it is a question whether heredity plays a part.

Nearly one hundred years ago, Cruveilhier first found ulcers in the stomach of an infant who presented evidence of true melena, and since then many others have found gastric and duodenal ulcers at necropsy. Just recently twelve cases of esophageal ulcers found at necropsy, have been reported from Germany(15).

Feer and Sedgwick say that thrombosis of the small intestinal vessels with consequent hemorrhage resulting in tissue digestion is the most probable cause of the gastro-intestinal type of hemorrhage(10).

"Duke believes that the bleeding is due to a deficiency in the number of platelets in the blood and thus absence of thrombus formation which is essential in order to produce clotting"(9).

Vaso-motor ischemia or vaso-motor spasm is also mentioned as a probable cause in some cases.

Thus many theories and causes have been advanced to explain hemorrhage in the new born, the most common of these being: A definite hemorrhagic disease, other diseases such as syphilis, sepsis, toxemia and eclampsia and various micro-organisms, ulcers, a deficiency in the number of blood platelets, trauma in its various forms and asphyxia.

SYMPTOMS

The symptoms depend upon the location and the severity of the hemorrhage. If the hemorrhage is cerebral, there will be muscular twitching of the face, arms and feet, a sharp peculiar cry, constant or intermittent cyanosis especially of the face, though it may be general and prolonged. Then there may be drowsiness, stupor, refusal or inability to nurse, there may be irregular respiration or difficult breathing, convulsions and paralysis. Bulging of the anterior fontanel is not common though it may be present, it may be flush or even depressed, depending upon the location of the hemorrhage and the pressure within the cranial cavity or spinal canal. There may be a trace of fever or it may be subnormal.

If the hemorrhage is of the gastro-intestinal type and it is profuse there will be pallor, anemia, restlessness, air hunger, cyanosis and other evidences of shock as a rapid weak pulse, exhaustion and collapse. Of course there will be the appearance of blood unless it is of a concealed type. The one most common symptom is the very sudden loss of weight. In a large number of cases there is diarrhea.

DIAGNOSIS

The diagnosis of hemorrhagic disease should not be difficult. It is important, however, to rule out the other hemorrhagic diseases of the new born such as acute fatty degeneration, better known as Buhl's disease and infectious hemoglobinuria or Winckel's disease. Multiple hemorrhages may be associated in both of these diseases. Cyanosis and icterus are also common to both. Buhl's disease begins at birth with cyanosis, icterus and fatty degeneration while Winckel's disease begins suddenly about the fourth day with icterus and hemoglobinuria. Both diseases are rare and both are extremely fatal.

From the standpoint of prognosis it would be a sad mistake to confuse icterus neonatorum with either of the above diseases. Hemorrhagic purpura should also be eliminated.

Other diseases such as acute poliomyelitis, acute meningitis, acute encephalitis, while they do not usually occur so early in life, should be given consideration.

If we keep in mind the possibility of hemorrhage during the first few days of life and be on the lookout for signs and symptoms, the diagnosis of hemorrhage should not be difficult.

Many writers state that any symptoms which occur within the first few days of life and cannot be explained in any other way should lead one to suspect cerebral hemorrhage. In fact cerebral hemorrhage should be considered in every baby acting abnormally.

In suspected cases of intra-cranial hemorrhage lumbar puncture is of great importance.

Huenekens states that "the coagulation and bleeding time tests during the first few days of life are important aids to diagnosis. In connection with hemorrhagic disease of the newborn, Rodda has shown that the coagulation and bleeding time are prolonged, and has suggested this simple method for determining the coagulation time:

The apparatus required consists of a spring lance (a simple scalpel will suffice), two 1½-inch watch glasses and No. 6 shot, all of which are easily obtained and transported. Glass and shot should be cleaned, preferably by washing with soap and water, followed by alcohol and ether. Needless to say, the lance should be sterile, which implies freedom from old blood. The heel of the infant is sponged with ether, a puncture is made with the lance blade set (about 0.5 cm.) to produce a free flow of blood without the slightest pressure. A clean watch glass containing a No. 6 shot receives the second drop of blood. A second watch glass is inverted over the first. The watch glasses are gently tilted every thirty seconds until the shot no longer rolls, but is fixed in the clot. The end-result is sharply defined; without dislodgment of the shot"(11).

The normal coagulation time is 3 to 5 minutes. Some extend this time to 8 minutes but others insist that if the coagulation time runs over 5 minutes in an infant, it should be considered and treated as a case of hemorrhagic disease.

Abt and Pearce state that the duration of the disease in cases which recover is usually one or two days. In fatal cases it is rarely more than three and more often less than one day. Holt and Howland say that before the introduction of treatment with human blood serum the hemorrhagic disease in the newly born had a very bad prognosis. Of 709 cases collected by Townsend, the mortality was 79 per cent.

TREATMENT

Prophylactic. More care should be used to prevent trauma during delivery. The proper application and early use of forceps in long difficult labors is necessary. Frequent coagulation and bleeding time tests assist in making an early diagnosis. In intracranial hemorrhages lumbar puncture is necessary for diagnostic and therapeutic purposes. Early diagnosis and prompt treatment will prevent many deaths. It will also prevent many cases of cerebral spastic paralysis, physical impairment and mental deficiency in later life.

Curative. There seems to be some difference of opinion as to the best and safest treatment for intracranial hemorrhage. Grulee(12) of Chicago, is of the opinion that rest and quiet are most important in these cases. He feels that the damage to the brain structures occur early and that lumbar puncture and decompression operations are of but little value.

Many others disagree with this teaching and practice and urge early and repeated lumbar puncture, especially while the blood is still in the liquid form. These punctures reduce pressure, remove blood and are repeated until clear fluid appears.

Tapping of the hemorrhage by way of the anterior fontanel is done by some. Cistern puncture and decompression operations for removal of clot are practiced by many.

Local measures may be employed on external hemorrhages, such as silver nitrate stick to the cord and the application of pressure. The administration of calcium lactate, twenty to thirty grains in 24 hours, will do no harm.

Some report good results on thyroid and parathyroid extracts in the control of hemorrhage(13). others believe that gelatine given by mouth is of some value(2). The pharmaceutical houses, Parke-Davis, Lilly and others, put up solutions of thromboplastic substances which may be of some value also.

These and many other measures are being used but all seem to be agreed that the one real treatment in these cases of hemorrhagic disease is the subcutaneous or intramuscular injection of 30 cc. of whole human blood or human blood serum. It may be necessary to repeat this amount every day or several times each day, depending upon the amount of hemorrhage and the condition of the infant. It is the one specific and curative treatment for hemorrhagic disease of the new born. Henry F. Helmholz of the Mayo Clinic(14), says that during the last year we have made it a routine procedure in cases of more severe labor and forceps delivery, to give infants at the time of birth a prophylactic injection of blood. The father is usually available, and it can be carried out very simply.

Transfusions are also recommended and used with success. In these it is not necessary to type and make previous agglutination tests, especially if the mother's blood is used, as reactions seldom occur.

In conclusion, I wish to acknowledge and express my appreciation for help and suggestions given by the Children's Clinic of Omaha, Drs. Perkins and Melgaard of Sioux City, the Children's Clinic of Lincoln and H. M. McClanahan of Omaha.

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NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M. D., INTERNIST AND A. J. MILLER, M. D., PATHOLOGIST

Edited by

L. L. Davidson, M. D.

CASE NO. 20983. March 4, 1927.

A very emaciated, tanned, salesman, aged 29 years, was wheeled into the ward on October 2, 1926, complaining of:

Loss of weight.
Vomiting without nausea or pain.
Tires easily.
Prickley feeling in chest.

ONSET AND DEVELOPMENT: The patient considered himself in good health until at 19 years of age, July, 1916. A hot Sunday was spent swimming. The following morning he returned home from work because of generalized aches, pain in the chest, high temperature, and a dry hacking cough. After a week in bed he was taken to the hospital in a semi-conscious condition and remained delirious for about three to four days. After this time his temperature fell, he resumed consciousness and the sputum became mixed with blood. He remained in the hospital about two weeks. The pain, which had persisted over the left chest, was relieved a few days before dismissal by aspirating about a pint of pus. The weight which had dropped from 135 to 100 rapidly returned in a month, when he returned to work.

In 1918 he joined the U. S. Military Training Attachment. That September he became too weak to drill, was feverish and was confined to bed. Chest pains caused insomnia. He developed a slight unproductive cough, was constipated and had anorexia and lost weight to about 110 or 115 pounds. After about two weeks of this "flu" patient was slow to regain strength, his weight not returning to his normal 150 pounds until the following December.

In the fall of 1919 he suffered dull pains in the upper chest, a slight fever and was confined to the hospital for three or four days. He was able to return to work in a couple of weeks.

During the summer of 1921, he developed frequent nausea and vomiting. Nausea always preceded the vomiting which gave relief. This occurred at no definite time of day, had no relation to meals, food, mental or psychic state. About once a week this condition became severe enough to cause the patient to go to bed.

In September, 1921, he was taken suddenly ill. He was weak, had a return of the aches in the chest but on the right side together with temperature and a productive cough. The sputum was copious and thick yellow. He did not remember any odor or taste. He was continuously nauseated and frequently vomited. A gastric analysis at that time showed (he was told) no free HCl. His tonsils were removed and his nose operated upon. After two or three weeks in the hospital he returned home very weak but felt well. He returned to work in about one month. His weight, which had dropped from 150 to about 100 pounds, together with his strength, slowly returned over a period of four or five months.

He worked out of doors in 1922-23-24 and was troubled with only occasional nausea and vomiting.

In May, 1925, he had a severe coryza, weakness, a slight chest distress, a productive cough and again loss of weight. He had an afternoon rise of temperature at the time but was without night sweats. His stomach trouble was absent. He never suffered pain. His greatest complaint was weakness. His weight dropped to 115 pounds and he was in the hospital a week to ten days. He lost blood from hemorrhoids and says his count at that time was reported around 2 million. Six weeks after dismissal he was back at work weighing about 145 pounds and feeling fine.

His last and present attack began in October, 1925, with loss of weight, an afternoon fever, tiring easily, anorexia, and a yellowish color to the skin (first noted). Spontaneous vomiting was frequent (once to twice daily) without nausea or pain. Commonly he ate a portion of his meal, vomited it, and enjoyed the rest of his meal without any interference. There was no chest disturbance. He worked until January, 1926, when he went to the hospital because of weakness and loss of weight (120 pounds).

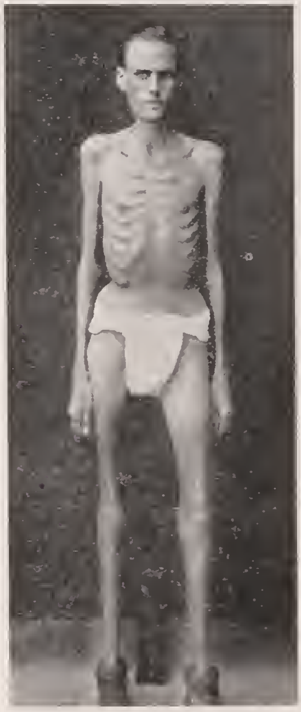

Fig. 1. Case No. 20983. Photograph taken just before dismissal from University Hospital. November, 1926.

In two weeks he returned home and to bed but continued to lose weight going below 100 pounds. About this time he began exposing himself to the sun's rays and to artificial ultra violet rays. He returned to the hospital at various periods for 5 blood transfusions; one in March, three in August and one in September.

During the last week he has noticed a "prickly feeling" over the sternum and his weakness has increased. He feels well but knows he has lost much weight. He was sent to the University Hospital because of failing finances.

PREVIOUS HISTORY: Scarlet fever was reported in childhood. He denied venereal infection. He had noted no tingling but complained of cold feet.

FAMILY HISTORY: His mother died at 50 with cancer (location unknown). His father was living and well. He has three sisters and four brothers living and well.

PHYSICAL EXAMINATION: A markedly emaciated, tanned, young man lay quietly and comfortably in bed, alert, answered questions readily and carried out all movements quickly, without pain or apparent effort. T. 96; P. 122; R. 20.

Head: The cheek bones were prominent, the face showed a marked degree of emaciation. The sclera were pearly, the pupils equal, regular and reacted to light and accommodation. There was no tenderness on pressure over sinuses or alteration of hearing. The nose showed no obstruction, secretion or hyperemia. The tonsils had been cleanly removed. The pillars were moderately injected. The teeth were in good condition. The tongue was smooth, geographic and had but few papillae.

Neck: The transverse processes of the cervical vertebrae were easily palpated. The thyroid was not enlarged, there was no lymphadenopathy.

Thorax: The ribs were very prominent. There was no alteration in expansion or fremitus. There was no change in the percussion note and no adventitious sounds were heard.

Cardiac: The apex beat was in the 5th interspace, midclavicular line. The size and shape of the heart were apparently normal and there were no thrills. There was no alteration in the rate, rhythm or valvular sounds.

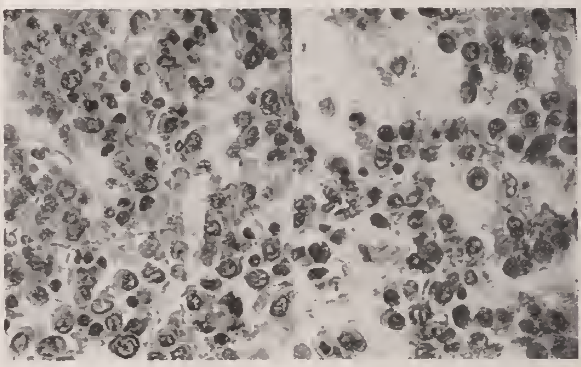

Fig. 2. Photomicrographs of bone marrow.

Abdomen: The abdomen was flat, tympanitic, not tender. The liver dulness was in the 5th interspace and did not extend below the costal margin. No masses or points of tenderness could be demonstrated. No spleen was felt.

Extremities: Knee reflexes normal. Ankle clonus present. Babinski absent. No loss in vibratory sense found.

Genitals: Normal development. No scars.

Rectal: Normal tonicity to sphincter, no tenderness, masses or bleeding.

LABORATORY: Numerous urinalyses were made. Specific gravity ranged 1008-20. It was alkaline then acid in reaction. Albumen, sugar and diacetic acid were negative and the microscopic examination showed no pus, R. B. C.'s or casts. Amount and specific gravity varied inversely. Blood pressure varied from 90 to 94 systolic and 70 to 76 diastolic. The urobilinogen showed no increase; the urobilin was negative. The direct Van den Bergh was negative, the indirect showed the faintest trace.

A Rehfus meal shortly after entrance had no free HCl and a low total acidity, never going above 23 degrees. There was no lactic acid in any of the specimens. Blood appeared in the second and third. There was no rennin. Repeated stool examinations were made in the 37 degree incubator using the warm stage and fresh stool. In only one specimen were nonmotile amoeboid cells seen. There were no ova, no parasites.

Blood sugar at entrance was 82 mg. A glucose tolerance test, using 60 gm. glucose showed a fasting sugar of 40 mg., ½ hr. 58 mg., 1 hr. and 1½ hr. 113 mg., 2 hr. 114 mg., 3 hr. 110 mg., 4 hr. 94 mg., 9 hr. 86 mg. Corresponding urinary sugars were negative. Basal metabolism was -22 per cent.

The blood picture gradually declined. The hemoglobin dropped from 50 to 20 then returned to 40 per cent. R. B. C.'s dropped from 2,500,000 to 1,800,000; W. B. C.'s ranges from 7,000 to 3,700. A differential count at entrance showed polys 43 per cent, large lymphos 3, small lymphos 53, transitionals 1, megaloblasts 1 with marked poikilocytosis and anisocytosis. The last differential showed polys 42, large lymphos 13, small lymphos 42, transitionals 3, with poikilocytosis and anisocytosis not so marked. The blood Wassermann was negative.

PROGRESS: During the time he was in the hospital, 30 days, his temperature was usually subnormal, ranging from 96.4 to 99.4. His pulse varied from 70 to 130 and his respirations from 13 to 30.

Entrance weight was 73 pounds. He was placed on the Minot-Murphy high caloric (2764) high iron diet; together with dilute HCl and arsenic. Only twice in the first 96 hours did he vomit, each time without nausea. He was cheerful, cooperative and without complaint, but was confined to bed much against his wishes.

On October 5th, the gastric analysis was done and on the following day x-rays of the teeth, chest, sinuses and gastro-intestinal tract were taken. Teeth were negative for root pathology. There was congenital absence of the frontal sinuses, the right antrum was 1-plus cloudy, the others clear. There was a pendulous heart. There was a peribronchial thickening; a few calcified glands were seen in the right hilus. There was no evidence of fluid in the bases. The apices were clear. There was some mottling of the right middle lobe, probably old tuberculosis. The cap was somewhat flattened with a niche in the superior surface. The stomach filled well and showed no defect. Peristalsis was fairly active. One-half of the barium meal was present in the six-hour residue. Probable ulcer of the duodenum with some obstruction and retention. With the barium enema, the colon filled well up to the middle of the transverse portion, gas preventing more complete filling. The descending and sigmoid colons were somewhat spastic. The splenic flexure showed the presence of some gas or fecal matter but filled well under the screen. This was later rechecked under atropin and found normal. An electrocardiogram taken October 8th was of no assistance. On October 9th a proctoscopic examination was done by Dr. Nilsson.

"Proctoscopic examination showed external hemorrhoids. Rectal wall was smooth and showed no pathology. The rectum was normal and there was no explanation for the bleeding point reported". Although this bleeding point could never be corroborated by examination the patient claimed to have bled considerably. His weight taken at this time was 73 pounds. He was 5 feet 7½ inches tall.

He woke up on October 16th with the left lower extremity swollen from the hip to the knee. The leg was tender only to deep pressure. Tenderness was particularly marked over the femoral triangle and along the saphenous vein. His temperature reached its highest point 99.4, his pulse 130.

For the next few days his food intake diminished for he was nauseated and vomited considerably. The leg was elevated and swelling diminished somewhat.

October 28: At this time his face had begun to fill out and he looked much improved. His weight was 83 pounds. His leg was still edematous but this was slowly receding. Glandular substances were given on the suggestion of Dr. Morgan, Temple University, Philadelphia: Insulin, units 5 hypo before each meal, thyroid substance, gr. ½ and adrenalin 1:1000 M. V. t. i. d.

November 1st: The photograph was taken before dismissal. Pigmentation disappeared during stay in hospital. In the last couple of days he had become discouraged, believed it a hopeless fight and wanted to go home. Such a depressed attitude was demonstrated rather suddenly.

Dr. Rodney Bliss took care of the patient for the remaining 6 weeks prior to death. He was up and around the house for a week only. Spontaneous vomiting continued and he became progressively weaker. He had no fever and his urinalyses were consistently negative. There developed about a week before death a generalized edema. His temperature then ranged from 100 to 102 and the patient was unconscious 36 hours before death.

DR. A. D. DUNN'S DISCUSSION

In the analysis of this man's troubles let us disregard the present bill of complaints and begin with him at the beginning. Almost ten years ago, his first trouble began. Its onset seemed rather sudden; characterized with generalized aches, chest pains, fever and cough. After a week in bed and after passing through a period of mental unbalance, his temperature fell and he spat up blood. But he remained in the hospital an added two weeks. There were chest pains and pus was said to have been aspirated. What was the matter with this man?

Student: Pneumonia, possible abscess.

Dr. Dunn: Pneumonia with an empyema would probably be more accurate. The fact remains that this man was sick and spat up blood. There was a chest infection. We start our story then with an infection.

In 1918, while in the U. S. Training Attachment, he apparently went through the common epidemic which was labelled at the time as "flu". That marks infection number two.

In 1919 there was another pulmonary insult, the nature of which was rather indefinite; but to us it marks infection number three.

In the summer of 1921, a new group of symptoms developed—this time referable to the gastro-intestinal tract. Without apparent cause, nausea and vomiting developed. Nausea preceded vomiting which had no relationship to meals, food, mental or psychic state. Attacks of nausea and vomiting, occurring with or without pain, without relationship to food or meals suggests cholecystitis. It does not suggest ulcer, for nausea and vomiting are not common in ulcer. We would probably be safe in assuming another insult, a fourth infection.

That fall, he was again taken suddenly ill. He became weak, suffered pains in the right (instead of left) chest, had fever, a cough and copius sputum. He was nauseated and vomited. This could easily be another flare-up in the gall-bladder. To support such an assumption, there was an achlorhydria. Achlorhydria or hypochlorhydria are common in gallbladder disease. His tonsils were removed, undoubtedly in the hope of removing a focus of infection. But his weight which had dropped about one-third was slow to come back. This was the fourth and possibly the fifth infection that this man had had in a period of five years.

Four years elapsed without serious difficulties; then in May, 1925, the old syndrome, coryza, weakness, loss of weight, chest pain and cough, recurred again severe enough to drop his weight to 115 pounds and to keep him in the hospital for a week to ten days. These were not little infections. They were severe, for each time they put him down. During this period of illness we note our first blood count and find it to be under two million We must remember, however, that this first count was associated with hemorrhage.

That same fall, October, 1925, there was an afternoon rise of temperature, weakness, loss of weight, a continuation of the gastro-intestinal upset, but no chest complaint. This marks at least the seventh infection that has hit this young man in a period of nine years. The last one was of sufficient severity to produce an anemia sufficient to make the physician and relatives anxious enough to resort to blood transfusions.

Only prior to his entrance to the University hospital were parasthesias suggested.

Reviewing the history: We have here a young man with the results of at least seven infections each of sufficient severity to put him down for a period of weeks and require months for recuperation—a young man who has experienced numerous chest insults, usually characterized with vague chest pains, fever, cough, weakness and loss of weight.

And we see here a young man emaciated. Remember, infection, starvation, carcinoma and occasionally anemia are common causes of emaciation. Surely he has had the infections, has gone through periods of starvation, has had bleeding and sufficient anemia to call for blood transfusions; age is against carcinoma. By anemia, we refer to secondary anemia for pernicious anemia does not cause emaciation and a smooth, geographic tongue with few papillae does not seem to answer the description of a bald tongue.

Even though the patient was a chest sufferer, physical examination failed to reveal any gross alterations in the thorax. The abdomen was negative for pathological findings. Apparently there was no tenderness over the gallbladder region nor was there a palpable spleen.

The clonus that was found on examination of the extremities does not fit in with the other normal neurological findings. With no signs of cord change, we will have to pass this clonus as an interesting fact probably without significance.

In the laboratory examination there is achlorhydria. Anything causing a profound emaciation will do this. In the Rehfus meal, blood was found in two specimens. Was this tested chemically? We will pass this, for unless these tests were markedly pronounced they may carry some error. If they are of significance blood should have appeared in other specimens and there should have been blood in the stool.

Intern: Stools were negative for blood.

Dr. Dunn: The sugar tolerance curve that is given may be considered normal. The basal metabolic test is low, but the whole individual is under par, and is running in low gear. The blood pictures demonstrate anemia, but the differential counts do not seem to indicate marked bone marrow hyperplasia.

The patient ran the mill roentgenographically. I believe we are safe in disregarding the gastro-intestinal tract for any marked abnormalities. The chest x-ray denoted tuberculosis pretty well healed.

There will be more or less conjecture in our attempt to construct an anatomical diagnosis because of our incomplete record. The last few weeks of the patient's life were spent at home. We do not know much about the last days of his life and there are many things found at autopsy that appear the last week or ten days of life. Terminal pathology may be foreign to that which has been going on before. There will have been some last changes of which we shall have no indication. With the evidence at hand we must assume the following:

(1) An anemia (secondary) because,

(a) our blood picture is decidedly questionable for pernicious anemia,

(b) we have no other indications that we are dealing with a hemolytic anemia, such as urobilinogen, positive Van den Bergh, palpable liver and spleen; in other words, the signs pointing toward a hemolytic anemia are absent;

(c) bald tongue absent,

(d) no cord changes,

(e) emaciation present.

Secondary anemias will produce anasarca. I had a patient with anemia and anasarca who had bleeding hemorrhoids. The hemorrhoids were repaired under local anesthesia and she had a normal blood count in six weeks.

(2) Phlebitis.

(3) Cholecystitis—probably some evidence of healed cholecystitis.

(4) Repeated infections that may or may not

have left their mark—pleural adhesions on the right side and signs elsewhere in the body.

(5) Tuberculosis of the right lung probably pretty well healed.

Intern: Could the disease be interpreted as going through cycles? We have a possible hyperasthesia and a picture suggesting pernicious anemia.

Dr. Dunn: This case is one of deficient blood production from some unknown cause. In pernicious anemia there is blood destruction. With this story and the absence of frank signs of a hemolytic anemia I should not make a diagnosis of pernicious anemia.

Intern: How do you account for no free HCl?

Dr. Dunn: If all the patients who have no free HCl have pernicious anemia the disease incidence would be much higher than it is. Not 5% of cases with no free HCl have pernicious anemia. Absence of HCl is common, for instance, in gallbladder diseases. We test stomachs on any gastro-intestinal complaint as a routine. We have records of cases of 20 years' standing with no free HCl who have no signs of pernicious anemia.

DR. A. J. MILLER'S DISCUSSION

Gross Description: The body was markedly emaciated. There was a lemon-yellow color to the subcutaneous surface. There was about 300 cc. of fluid in the peritoneal cavity. A small amount of fluid was found in the pleural cavity. Firm adhesions were noted on the right side. The heart weighed 265 gm. and was not remarkable except for the lemon-yellow tinge to the fat.

The liver was a chocolate brown. It weighed 440 gm. The spleen was fibrous. The kidneys weighed 140 gm. each and were not remarkable. The stomach was negative. The peribronchial glands were not enlarged. Bone marrow taken from the middle third of the thigh was gray in color and not the dark red of pernicious anemia. Permission was not obtained to open the head so we can say nothing about the brain.

Grossly there were no changes in the gallbladder.

Microscopic: Bone marrow: Small tubercules were found readily. In all of the sacs there were one or more tubercles. They were quite typical of tuberculosis. We looked for tubercle bacilli and found none. The lesions appeared to be healing. We think from the appearance of the bone marrow that the blood count should have been higher. These sections were only of the thigh. We don't know how extensive they were.

Lymph node: Tubercles were found here also. Lymph follicles were atrophic. There was much hyperplasia. A huge giant cell was present. The tubercles seemed to be old and healing.

Lungs: Some calcareous nodules were present. They were no doubt due to old tuberculosis. Small foci of infection were occasionally found close to the bronchus that were, I think, recent.

Pancreas: It was rich in parenchyma. You could see very little stroma.

Kidney: A small lesion, an arteriosclerotic infarct was found. Casts appeared. There was not a great deal of damage to the kidney. The lumens of the tubules were of good size. The epithelium was quite normal.

Liver: Tubercles were seen which looked as though they were healing. They did not appear progressive. There was very little reaction surrounding the necrosis. The striking thing was the failing of the cytoplasm in portions of the liver. On closer inspection it looked as though some of the cells had died. It looked like focal necrosis. There was a good deal of brown pigment in the liver. The only explanation I can see is that there was some toxic substance in the liver coming from the gastrointestinal tract.

This man had a latent tuberculosis of the right lung, liver, lymph nodes and the bone marrow. I think we will have to say that the amount of activity in the bone marrow that we saw was a hyper-activity. We do not usually find such activity in the mid-portion of the thigh.

I am at a loss to explain the man's symptoms or even his death. We would think that the active bone marrow and the chronic lymphadenitis and the lesions in the liver were manifestations of a tuberculous infestation and the tuberculosis was confirmed. There was an anemia, of course. Cholecystitis was not present.

Dr. Dunn: The thing about the case to notice is that the case as analyzed was not pernicious anemia. The thing goes back to infection although we are not absolutely certain what infection has done. Tuberculosis was certainly present. It certainly was the infection that produced the necrosis of the liver. Tuberculosis of the lung was correct. The lesson we learn is the differentiation between a primary hemolytic anemia and an anemia from infection. There are as yet only certain palliative things to be done in a pernicious anemia. Liver therapy is still on trial. But when you get an anemia of this type, look for some other trouble that you may be able to help. Look for an infection. A number of secondary anemias are due to tonsil infections. I saw one case that looked like a pernicious anemia and turned out to be a mouth infection. The local condition was cleared up and the patient is well 12 years later. So, if such a case has any lesson to give, it is that. It has also increased our knowledge of what tuberculosis can do.

BASAL METABOLISM*

F. W. NIEHAUS, M. D.,
Omaha, Nebraska.

Studies of metabolism embrace one of the major fields of medical research, therefore, it will be necessary to limit this discussion to respiratory metabolism. The evolution of this phase of the subject dates back to 1849, when Regnault and Reiset constructed a closed circuit apparatus for measurement of oxygen consumption and CO_2 production; then Pettenkofer and Voit. Zuntz and Geffert constructed first apparatus of open circuit type. Atwater and Benedict used respiration calorimeters. Magnus Levey, 1894, working with Zuntz-Geffert apparatus, made many contributions, including demonstration of increase of metabolism in goitre. In 1911, Benedict apparatus was installed in Bellevue; in 1913 respiration calorimeter was built in Russel Sage Institution of Pathology. Benedict devised simple forms of apparatus, modifications of which has resulted in many types now available.

Respiratory metabolism is studied to determine the heat production. Rubner, a pupil of Voit, first proved that food oxidized in the body produced the same amount of heat as when burned outside the body. The latter can be measured directly in calorimeters.

This principle was first used by Pettenkofer and Voit and by Atwater and Benedict. These were large enough to accommodate men. For animals this type was used extensively. For very obvious reasons, this type of apparatus could not be used extensively in the practice of medicine.

But since heat production can be measured by oxygen consumption or CO_2 production, much less cumbersome apparatus can be used. All apparatus now used is based on the measurement of one or the other of these gases. Of these, those utilizing measurement of oxygen consumption are by far more widely used. In fact, these tend to divert from original premise of heat measurement, so calculations are made directly from volume of oxygen consumed.

Many types of apparatus have been constructed, each of which claims advantages. It seems that the simpler types of apparatus with tubing and connections reduced to minimum, a scale which is easily read, are the preferable. Flutter valves, blowers, etc., are of doubtful value, and usually only add one more part to replace. The Kimograph recently added is a convenience to the experienced technician, as it furnishes a permanent record, and when tests are done by the inexperienced, many errors can be readily detected.

Since food and exercise cause a marked rise in rate of metabolism, obviously some standard condition must be chosen. The condition when these factors play a minimal role is after a night's sleep, and in the post-absorptive period, 12-14 hours after food has been taken. At this time metabolic changes are produced by use of stored food. Proteins then furnish about 15% of the calories, and calorific value of a liter of oxygen is 4.825 to 4.78. The respiratory quotent is 0.82. The rate of metabolic processes under basal conditions is measured in calories per square meter of body surface per hour.

This formula, based on weight and height for calculating the body surface, applies pretty well to all individuals, although may not be entirely correct in extremes of emaciation or obesity. Sex and age also modify heat production. In interpreting the significance of abnormal metabolism finding in patients, Mean says, "We must correlate them with clinical findings and weigh their probable importance in comparison with every other sort of evidence in a given case exactly as we would interpret any other special finding, as x-ray, phenolsulphthalein test, blood chemistry, etc. We should not assume that because a given patient's metabolism is plus 25%, that he has hyperthyroidism."

Inaccurate technic is a very fruitful source of error. Proper technic consists of more than correctly arranging the machinical parts of the apparatus. Benedict says that any high school girl of average intelligence can readily master the technic. This may be true of the mechanical factors. Nevertheless, if tests are carried out by one familiar with the basic principles of metabolism, erroneous results will be reduced to a minimum. As the co-operation of the patient is a factor of first importance, often the same maneuvers are necessary as a clinician uses in managing his patient, that is, by reassurance, persuasion, and at times domination. The conditions in which determination of metabolic rate are of value as (a) thyroid disease. Hyperthyroidism can easily be diagnosed by classical symptoms. Here, it gives somewhat of a quantitative idea of the intensity of the condition, and quantitatively shows results of treatment, although this is usually, also manifest by abeyance or exaggeration of the other findings as pulse rate, etc. In fact, toxic thyroid cases can be well managed without B. M. R., determination, in somewhat the same manner as typhoid cases can be well cared for without a thermometer. The inference is not to be drawn that this measurement is, by any means as fool proof, as taking the temperature. In borderline cases, as neurasthenia, neuro-circulatory asthenia, etc., an accurate estimation of basal metabolism rate will be very valuable. Incidentally these are the type of cases requiring greatest care in getting accurate readings, and where an inexperienced technician may lead one far astray. B. M. R. in toxic adenomata, usually varies from plus 20 to 40, while with exopthalmic goitre it may rise to plus 80 or 100%. (b) In hypothyroidism, particularly of milder degrees, the determination of the B. M. R. is of more aid than in the hyperthyroid states. Myxodemia, which is easily recognizable, is, of course, the result of a definitely evident hypo-activity, but there are also a large number of cases in which the condition is of a milder degree in which the clinical findings are less evident. In this condition the B. M. R., is a valuable aid in diagnosis, and also a guide as to the amount of thyroid extract administration necessary to improve these patients.

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*Read before Omaha-Douglas County Medical Society, April 12th, 1927.

Changes of metabolism have been studied in many other conditions. (c) In fever, DuBois studying a variety of febrile conditions found an increase of 7.2% for each degree Fahrenheit. This point might be of some service in calculating diets in fevers. In undernutrition the metabolic rate is low. In obesity, enormous grades are possible without alteration of metabolic rate. In this condition it is questionable whether we are justified in using the same formula as for normals, based on height and weight, when we consider the high per cent of inert blubber which has little or no active metabolism.

Diseases of the pituitary gland have shown little evidence of influencing B. M. R. There is some evidence of a rise in early stages of acromegalia. Boothby says, "There is a little evidence that the secretion of the pituitary gland is concerned with the rate of cellular combustion." The same may be said of sex glands. A few have reported increases of B. M. R. at onset of, or just preceding menstruation. This suggests that tests might be more accurate if this period was avoided. Leukemias show a high B. M. R. Anemias show changes, but so many other factors can come into play that certainly not much of value can be anticipated. The same is true of decompensated cardiacs. where gaseous exchange is seriously interfered with, and the amount of work from respiratory effort, throw in unsurmountable variables. These latter conditions are mentioned, not because they are of value, but as calling attention to pitfalls in regard to metabolic work.

In diabetes mild cases show no change. In severe cases the B. M. R. is lowered proportional to their degree of emaciation. With apparatus measuring both oxygen consumption and CO_2 production, the respiratory quotient can be determined, and thereby the percentage of calories derived from combustion of carbohydrate can be calculated.

Drugs as a rule should be avoided before tests; particularly caffein or barbital derivatives, or any other stimulants or depressants. In conclusion tests inaccurately done or misinterpreted are worst than no test. The final evaluation of the test must be made by one familiar with the basic principles of metabolism, either clinician or clinical pathologist.

—736 Medical Arts Building.

GLUCOSE SUBCUTANEOUSLY

No ill effects result from the subcutaneous injection, in infants, of a 10- to 15-per cent solution of glucose. If care is used, 10 cc. per pound of weight may be given in this manner.—Drs. Tisdall, Drake and Brown, of Toronto.

THE DIASTOLIC PRESSURE

When the diastolic blood pressure is high, the aorta dilates.

Patients with a diastolic pressure of 130 mm. or more usually die in less than two years.—Dr. Stewart R. Roberts, of Atlanta, Go.

WHEN WIFEY TAKES THE WHEEL

Doctor (to patient who claims to be a nervous wreck): "What are your symptoms?"

Patient: "I jump when I hear a telephone, the door-bell sends me into hysterics. Any stranger coming to the house frightens me out of my life, and I'm afraid to pick up a newspaper. Do you know what's wrong with me?"

Doctor: "Yes. My wife drives a car, too!"—Passing Show.

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THE ASSOCIATION'S HEALTH EXHIBIT AT THE STATE FAIR

The prevision of the Council who sponsored the idea of a health exhibit at the State Fair is justified by the results and already plans are in the making for a better and larger exhibit for the 1928 State Fair. It will be recalled that the House of Delegates at the last annual meeting, on recommendation of the Council, appropriated $500 for an exhibit at the State Fair and appointed a committee to develop and carry out the intent of the motion. The exhibit which occupied two adjoining booths consisted of pathological specimens from Creighton and Nebraska State Universities Medical colleges; the paleopathological collection of Dr. F. B. Young, of Gering; placards from Creighton and Nebraska Universities and the State Bureau of Health; and a collection of biological products from Mulford.

Lectures were given almost continuously to groups of Fair visitors who by their attentiveness indicated an interest in the matter presented much greater than had been anticipated. Dr. E. R. Hays, Falls City, Dr. F. B. Young, Gering, and C. E. Leisure, senior at Creighton University College of Medicine, gave the talks and it is estimated that five thousand people eager for information were reached. The speakers dwelled on tuberculosis, typhoid, diphtheria, scarlet fever, focal infections, rickets and other food deficiency conditions, proper diet for children and adults, open air and sunshine, insect pests, and vaccination against small-pox, diphtheria, scarlet fever and typhoid fever. Several thousand folders entitled "Keep Well" furnished by the Nebraska State Medical Association, were distributed. Valuable assistance was given daily by two nurses furnished by the Nurses club of Lincoln.

THE YOUNG DOCTOR IN THE SMALL NEBRASKA TOWN

The widely discussed proposition that there is a growing scarcity of physicians in the smaller communities and the companion proposition often advanced that the younger physicians of more intensive and more expensive medical training will not go to the smaller places to locate for the practice of medicine has led the editor to make a survey of the distribution of physicians, graduated during the ten year period from 1917 to 1927, located in Nebraska, outside of the metropolitan cities, Omaha and Lincoln. Nebraska being a purely agricultural state with but two cities of above 14,000 population—a state in which, with the exception of those towns that are division or junction points on the railroads, the towns are but farming-community trading centers—it is thought, peculiarly lends itself to a survey of the distribution of younger physicians in small towns.

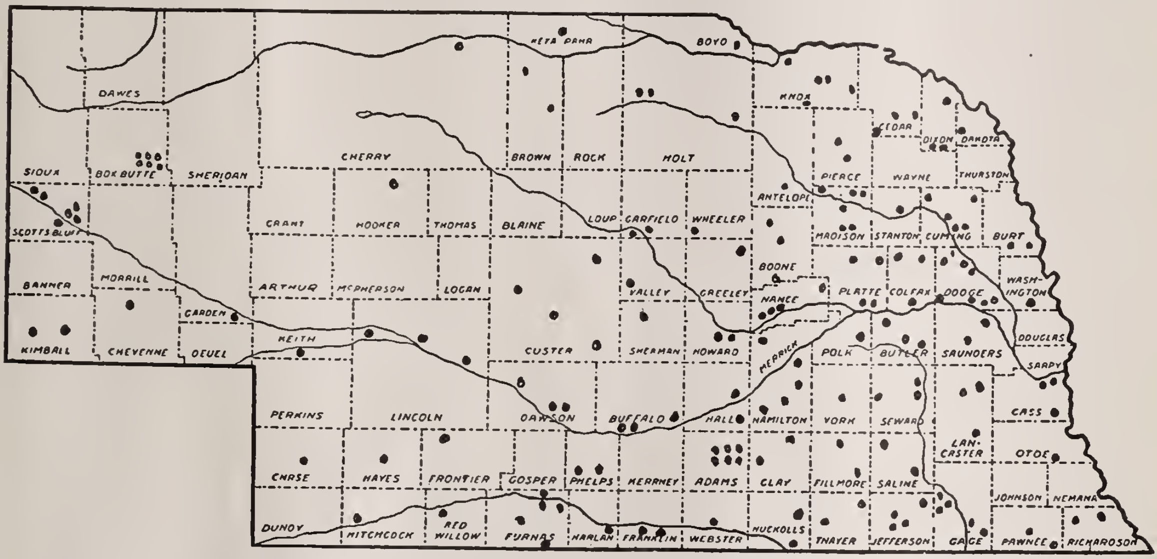
The survey is based on the Tenth Edition, American Medical Directory, supposedly up-to-date, January, 1927. The editor has personal knowledge of a number of young physicians who have located in small towns since the directory was issued and also of several removals from such towns. No further notice will be taken of these.

This survey shows that there are 174 physicians graduated since the spring of 1917, located in 137 of the smaller towns of Nebraska. In this list is one city in the 13,000 class, one in the 11,000 class, one in the 10,000 class, two in the 9,000 class, one in the 8,000 class, one in the 7,000 class, two in the 6,000 class, three in the 5,000 class, three in the 4,000 class, two in the 3,000 class and nine in the 2,000 class—a total of 26 cities having over 2,000 people with fifty of the 174 physicians, leaving one hundred and eleven towns of less than 2,000 people having 124 physicians graduated since the spring of 1917. The accompanying etching shows in graphic manner the distribution by counties and approximately by towns in the counties. The survey was undertaken, with no idea of proving or disproving, so far as Nebraska is concerned, the studies of Dr. William Allen Pusey and Dr. Palmer Findley, but as an interesting fact, bearing on the problem.

Those familiar with the physical geography and resources of Nebraska in their present state of development well understand that the supply of physicians in Nebraska has not reached an acute stage in the state and few will believe that any real scarcity is impending. It is admitted that some of the smaller community centers that in former days had physicians are minus physicians now. Some of these places in former days were supplied by physicians who were themselves homesteaders or investors in farm lands to whom the practice of medicine in the community was but an incident to help supplement the income.

Other small towns and communities now without physicians were able to support physicians years ago because less than a generation ago epidemics of typhoid fever, diphtheria, scarlet fever, dysentery, cholera morbus and cholera infantum were common and it may be conservatively estimated that the care of these produced one-fourth, perhaps one-third, of the work and income of the physician. With our better knowledge of the causation of these diseases most of them have been eliminated from the list and the treatment of those cases that do occur is, for the most part, specific and positive and calls for less of the time and service of the physician.

The automobile supplanting the horse, the rural telephone supplanting the mounted messenger boy of yore, the good roads movement, have produced a complete revolution in the method of bringing together patient and doctor in rural communities. Twenty years ago, a family living ten miles from town and doctor, having a baby seized with an alarming case of croup, put a boy on a horse and sent him for the doctor. The ride to the physician's office took 1½ hours. Another 1½ hours was consumed before the doctor with horse and buggy reached the bedside. Nowadays it takes less than three minutes to call the doctor by phone and in another thirty minutes the doctor is at the bedside. The sparsely settled community, that cannot support a physician, 25 miles from a town having medical service, can get a physician in about one hour and three minutes, or in about one-third the time in which the settler of twenty years ago could get one to his farm home ten miles from town.



Outline Map of Nebraska showing location of 174 physicians graduated since the spring of 1917 by counties and approximately by towns.

The economic phase has not been touched from all angles. Physicians will not likely go to places that will not afford a living. They are not unwilling to go to smaller places if the prospects for an economic success are good.

Those in position to have definite information know that within recent years some of the best graduates have gone to the small towns, in fact, most of the graduates of the Omaha schools have located in the smaller places and this is particularly true of the higher class graduates.

The Nebraska distribution of physicians, graduates of ten or less than ten years, is in a considerable measure due to the presence within the state of the two Omaha medical schools. A large number of young medical graduates have the homing instinct and prefer to settle in their native or adopted state if opportunity offers.

If the medical schools of the United States were better distributed among the several states, instead of most of them being in Chicago, New York, etc., there might be no problem of physicians for smaller towns in parts of the country.

THE UNIFORM LICENSURE LAW

Just about a month ago every one of the 1846 physicians in Nebraska was the recipient of a rather curt note from the Department of Public Welfare notifying him that the annual renewal fee of $1.00 was then due. It is safe to say that every one was surprised and some were startled and confused, not knowing what it was about.

All physicians knew about the passage of the Basic Science Law, because that was generously discussed by physicians and press before its passage. The Uniform Licensure Law was passed without much comment, and, therefore, its enactment was not common knowledge among the profession at the time the notices were sent out.

The law applies to professions of Medicine and Surgery, Osteopathy, Chiropractic, Dentistry, Pharmacy, Nursing, Chiropody, Optometry, Embalming and Veterinary Medicine. The date for the license renewal of each distinctive profession is different; that of Medicine and Surgery is October 1, of each year.

The reason for this law which none of us wanted is that the Department of Public Welfare has heretofore never had any fund upon which to draw for the purpose of making investigations of complaints against persons charged with infractions of the laws regulating the practice of the several professions above named and for the prosecution of such persons. The passage of this law provides such a fund. Knowing the reason for the law, all legitimate medical practitioners, will cheerfully pay.

The law has at least two provisions which it were well for all to fix in their minds: Any one who fails to pay the dollar by October first of each year has one month of grace in which to pay, but he must pay an additional fee of $1.00 for his failure to pay on time. Failure to pay by the end of the month of grace, automatically causes revocation of the license. Another important provision is that the license must be kept displayed in the office. Pay your dollar with a smile!

CULTURES OF AN ORGANISM FROM CASES OF TRACHOMA IN AMERICAN INDIANS

Hideyo Noguchi, before the Section of Ophthalmology, A. M. A., 1927, read a paper outlining his experiments as indicated in the above title.

Noguchi examined five cases from the Indian School at Albuquerque, New Mexico. Subconjunctival inoculations of conjunctival material in six monkeys failed to produce the infection. By using a special medium, however, a semi-solid agar containing rabbit's blood, cultures were obtained from four of the five cases which present interesting possibilities. Besides the ordinary bacteria usually present as saprophytes, a small gram-negative pleomorphic bacillus was found which grew only on the special medium. Injection of these cultures sub-conjunctivally into monkeys caused the appearance of typical follicles about two to four weeks after the inoculation, which, after two to five months, resembled very closely the picture of human trachoma. Direct inoculation could be made from these lesions to other monkeys, resulting in a similar picture. Sections of the lesions in monkeys showed the characteristic histologic picture of trachoma. Inoculations of the other ordinary micro-organisms found in the cases of trachoma gave negative results which lead Noguchi to consider the small gram negative bacilli to be probably the cause of trachoma. In view of the repeated efforts to isolate an organism in trachoma and the amount of work which has been done in an attempt to connect certain intra-cellular inclusion bodies of a different nature from the bacillus described by Noguchi with the cause of trachoma, it would be premature to say that the cause of trachoma has been discovered because of Noguchi's findings in these four cases. He has opened a way to further work, however, which will be awaited with interest.

—**Sanford Gifford.**

GROUP INSURANCE

The United States Fidelity and Guarantee Company who has the group policy with the Nebraska State Medical Association has just announced a new plan for this policy which is available to all members.

A three year contract can be obtained which will cost three times the amount of a one year contract less 10%. It may be paid for on the following terms: 50% the first year, 30% the second year, and 20% the third year. The policy gives the same coverage as the one year contract.

—**R. B. Adams, Sec.**

FACTORS IN ADVANCEMENT OF ORTHOPEDIC SURGERY

Dr. John Prentiss Lord, Omaha (*Journal A. M. A.*, Aug. 27, 1927), reviews the evolution of orthopedic surgery. Naturally, he says, the advances in orthopedic surgery have been coincident with the development of general surgery, and its progress has been so rapid and spectacular that general surgeons were fully occupied by its major achievements. The status of orthopedic surgery in hospitals and in teaching institutions varies greatly. It is usually under the dominance of general surgery, and numerically the orthopedic surgeons are in the minority. There is great lack of uniformity in curriculums and great variation of custom in the distribution and assignment of cases to orthopedic departments. The newer and broader classification of orthopedic conditions includes fractures, osteomyelitis and joint diseases, all of which are prone to result in deformity and disability. One of the larger functions of orthopedic surgery is to prevent or minimize the latter conditions. Hence to accomplish these results such cases should be assigned to the orthopedic department on admission. Many orthopedic surgeons have reason to complain that too often their departments are but the dumping ground, the junk heap, for maltreated cases from general surgeons and general practitioners. An outstanding factor in the advancement of orthopedic surgery is that, in recent years, great interest in the cripple has been shown. Therefore, the cripple is the recipient of very special attention which has brought the cripple or the potential cripple to some of the organized agencies for his care. The particularly strong appeal of the crippled child has loosened the small as well as the large purse strings. All these and similar evidences of serious interest in the crippled child serve to advance orthopedic surgery. The organized agencies for the care of the crippled are so numerous and so active that very large numbers of cases have become available for clinical and teaching purposes. This command of material has done much to increase the experience and enhance the skill of orthopedic surgeons. At no previous times has so much attention been given to the welfare of children. State hospitals for crippled children early demonstrated the necessity for wholesale provision for the care of our large numbers of crippled and physically handicapped children, now estimated to number nearly one-half million. Not all states have made this provision, and those who have not fully met the requirements. In some instances large bequests have supplemented state or community development of institutions for the relief, care, education and vocational training of crippled children. All this private and public interest in the cause of the cripple has been tremendously augmented by the assumption of the care of indigent crippled children and their temporary adoption by many organizations. Clinics for crippled children at state and county fairs and in connection with county and district medical societies, with the cooperation of the visiting nurses, increase the interest of all in the care and treatment of orthopedic cases and enhance the practice of those in the orthopedic specialty. One of the reasons for a wider and more general improvement of orthopedic principles and practice is the fact that surgeons are becoming better orthopedists and orthopedists are becoming better surgeons. It is, therefore, gratifying to note that much of our present-day progress comes from both our highly trained specialists in orthopedic surgery and our orthopedically minded general surgeons.

NEW STEP IN INTERNATIONAL RELATIONS OF PHYSICIANS

The cordial relations of the physicians of America, North and South, and their colleagues of the Old World were further expressed by the appointment of American representatives to the editorial cabinet of the Acta Dermato-Venereologica published under the direction of Dr. Johan Almkvist of Stockholm, Sweden. The nominees are: Howard Morrow of San Francisco, Howard Fox of New York, J. B. Shelmire of Dallas, D. R. Smith of Toronto, Pardo Castello of Havana, and Herman Goodman of New York.

The Acta Dermato-Venereologica publishes original contributions in French, German or English within the fields of dermatology, urology, and social hygiene, and items of interest of persons or progress in these specialties.

American literary contributions should be addressed to Dr. Herman Goodman, 18 East 89th Street, New York City.

SUN-BABIES

"The Federal Children's Bureau sometimes presents in the popular form of a 'movie' the practical lessons learned during a long and painstaking investigation. Its latest film is called 'Sun-Babies', in which a number of attractive toddlers do their 'stunts' before the camera and show how Father Sun with his bright rays can straighten rickety legs and arms and backs which have become weak and curved because of poor food and lack of sunlight. And these interesting youngsters are no Hollywood heroes, but just ordinary children who were treated during a three-year study of rickets in New Haven, Conn. The picture tells graphically how the mother can give her baby sun baths whether she lives in a city apartment, in the suburbs, or on a farm".

This statement is from a bulletin called "The

World's Children" released weekly by the United States Children's Bureau, Washington, D. C.

It is the good fortune of the Division of Child Hygiene to possess this film for use in Nebraska. It is our purpose to show it in towns and communities that do some definite health work, in the towns holding "Health Schools" in which the Division gives four lessons to women and girls. It will also be shown in towns that have Child Health Conferences, especially the spring and fall conferences or quarterly Child Health Conferences.

These are a few of the rules that Dr. Martha Elliott gives after years of research and study and practical application of the sun's healing rays:

(a) The sun must reach the naked baby or parts of the body by direct exposure.

(b) There must be absolute regularity to obtain benefit both physiologically and psychially (for adult patients).

(c) Sun baths may be used profitably for all forms of tuberculosis, rickets, anemia and surgical wounds under the physician's advice.

(d) Sun baths may be given in winter as well as summer. The film will show how.

Utilize Nebraska sunlight for Nebraska babies and little children.

—Louise M. Murphy, Director.

EDITORIAL PARAGRAPHS

The number of new graduates in medicine in the United States this year is 4035.

The several state institutions of Nebraska have 7,000 inmates and 1,000 employees.

The Medical Society of New Jersey is the oldest in the United States, dating from 1766.

The average fee paid by medical students is $254, whereas the actual cost of his education is $705.

Watch the market: With the liver treatment of pernicious anemia in full swing, the price of liver will go up.

Up to six months of age 80 per cent of infants are immune to diphtheria—the immunity is conferred by the mother.

Dr. Richard Cabot says tabes is very rare among negroes and while they get syphilitic they do not often develop tabes.

The tenth annual convention of the American Dietetic Association will be held in St. Louis, October 17-19, at Hotel Statler.

Chadron has voted $35,000 municipal bonds for a city hospital. What Chadron has done other cities ought to be able to do.

Immunization against diphtheria is being urged in many quarters, especially in the face of an outbreak of the disease in the community.

It is now claimed by Parke Davis and Co., that hemostatic serum given by mouth will produce the same effect as if administered hypodermically.

The Bureau of Licensure might have worded its ukase calling for license renewal so as to give just a little bit of information to the uninformed.

If the price of sun lamps were not so exhorbitant they might have been introduced among Nebraska farmers this fall to help mature the corn crop while Old Sol was hiding his face above the clouds.

The birth rate is now lower in Sweden and England than in France, that country so long held up to contumely because of low birth rate. It is however explained that the death rate in the three countries named has decreased more than the birth rate.

As a result of the supernumary tooth in the basic science law passed by the last legislature, it is reported that a young Nebraskan graduated from Harvard Medical college, will have to undergo an examination in the sciences fundamental to medicine in order to obtain a license in this state.

The Bulletin of the Fulton County Medical Society (Atlanta, Ga.), is a neat 8-page publication devoted to the interests of the society. One is impressed that this, or similar small publications, must be very much worth while in populous centers for the purpose of keeping in touch with the membership.

The Standard Laboratories Inc., a Chicago concern catering to physicians is reported to have filed a voluntary petition in bankruptcy. This item may be of interest to a number of Nebraska physicians who have dealt with the above concern and who hold profit-sharing certificates or "Gold Debenture Bonds."

An editorial in the *Boston M. & S. J.* asks, "Why attempt repressive measures with the typhoid carrier and let the syphilitic man or woman sow the seeds of the disease upon innocent members of society?'" The answer is evident.

We often think, that, after all, pre-war Germany had the best government in the whole world.

Omaha, through health commissioner Pinto is pushing the campaign to immunize 35,000 school children with diphtheria toxin-antitoxin. Joint meetings of the various social welfare organizations and the local medical society have been held in an endeavor to spread the propaganda necessary to the accomplishment of the object sought to be attained.

Five thousand cases of typhoid fever have been reported in Montreal since early spring. American Public Health officers went there to investigate the outbreak and assist the local health authorities by suggestions. Unwillingness of an ignorant populace to cooperate in the enforcement of public health regulations is probably at the bottom of the trouble.

Dr. Earl Whedon, secretary of the Wyoming Medical society, Sheridan, speaking in the vernacular well understood in the Wyoming country says in *Colorado Medicine,* "It is the greed of the hog for slaughter house refuse that prompts a member of the medical profession to consult with and operate for, a chiropractor or any other outlaw or faker, and nothing more."

Infections of the face, especially the upper lip, are of the most malignant type. A considerable percentage of them give rise to thrombosis of the cerebral sinuses, septicemia and death. When such infections are treated surgically the mortality is much higher than when conservative measures are applied. The writer recalls hearing the late Dr. J. B. Murphy state that carbuncle on the upper lip treated with the knife is always fatal.

May a physician's wife—not a medical graduate, not a nurse—practice medicine just because she is a doctor's wife and his office assistant? This question came to the editor recently in a specific case quoted in which gossip says the wife practices obstetrics and takes care of minor surgical cases as well as gives powders and pills and potions for most of the ills to which flesh is heir. This is evidently a case for the Department of Public Welfare and a few of the dollars we are just now paying for license renewal under the new law may well go toward an investigation of this or similar cases.

Joshaway Crabapple says: "The old-time shot who put notches in his gun handle for his victims, left a grandson who has several dents in his off fender."

INTER-STATE POST GRADUATE MEDICAL ASSOCIATION AND THE KANSAS CITY ANNUAL FALL CLINICAL CONFERENCE

Kansas City, October 14th to 21st, 1927

New Shrine Temple, 11th and Central Streets

Pre-Assembly Hospital Clinics
Friday and Saturday, October 14th and 15th

Inter-State Post Graduate Assembly
Monday to Friday, October 17th to 21st
(inc.)

Scientific Program

Pre-Assembly Clinics at the hospitals of Greater Kansas City upon Friday and Saturday mornings (October 14th and 15.) Scientific Programs and ambulatory clinics each afternoon at Muehlebach Hotel. Dr. J. Shelton Horsley of Richmond, Virginia, is a special guest upon Saturday afternoon (October 15); Subject: "Peptic Ulcer"—Illustrated.

The intensive program of the Inter-State Assembly will begin Monday, October 17th, at 7:00 a. m., and continue morning, afternoon and evening, until the banquet in honor of the distinguished guests upon Friday evening (October 21st.)

The guests from Europe are as follows:

Sir John Bland Sutton, England, Surgery; Dr. R. P. Ranken Lyle, England, Obstetrics-Gynecology; Dr. Ersilio Ferroni, Italy, Obstetrics-Gynecology; Prof. Adolphe Maffei, Belgium, Pediatrics; Mr. Garnett Wright, F. R. C. S., England, Pathology; Dr. I. Snapper, Holland, Pathology; Dr. Gustav Alexander, Austria, Otology; Dr. Otto J. Kaufman, England, Neurology; Dr. Giuseppe Franchini, Italy; Dr. Sigmund Frankel, Austria, Obstetrics-Gynecology; Mr. John S. McArdle, F. R. C. S., Ireland, Surgery; Dr. Luigi Mangiagalli, Italy, Obstetrics-Gynecology; Dr. J. Marinho, Brazil; Dr. Fritz Steinmann, Switzerland; Dr. Paul Unna, Germany, Dermatology.

The distinguished guests from America include the following surgeons:

Dr. Charles H. Mayo, Rochester, Minn.; Dr. George S. Crile, Cleveland; Dr. Alfred W. Adson, Rochester; Dr. Arthur Dean Bevann, Chicago; Dr. Jos. Colt Bloodgood, Baltimore; Dr. Hugh Cabot, Ann Arbor, Mich; Dr. Walter E. Dandy, Baltimore; Dr. John B. Deaver, Philadelphia; Dr. John F. Erdmann, New York; Dr. E. Starr Judd, Rochester; Dr. Francis E. Lahey, Boston; Dr. Dean Lewis, Baltimore; Dr. Chas. H. Frazier, Philadelphia; Dr. Wm. D. Haggard, Nashville; Dr. W. E. Lower, Cleveland; Dr. Robt. C. Coffey, Portland, Ore.; Dr. Jabez N. Jackson, Kansas City, Mo.; Dr. George J. Heuer, Cincinnati; Dr. LeRoy Long, Oklahoma City; Dr. John J. Moorhead, New York; Dr. Allen Graham, Cleveland, O.

The following distinguished internists are to hold clinics or give addresses:

Dr. Lewellys F. Barker, Baltimore; Dr. Charles A. Elliott, Chicago; Dr. Elliott P. Joslin, Boston; Dr. Frederick J. Kalteyer, Philadelphia; Dr. James H. Means, Boston; Dr. Leonard G. Rowntree, Rochester, Minn.; Dr. Clarence M. Grigsby, Dallas, Texas; Dr. Francis M. Pottenger, Monrovia, Calif.; Dr. Frank A. Smithies, Chicago; Dr. David Reisman, Philadelphia; Dr. John Phillips, Cleveland; Dr. R. S. Dinsmore, Cleveland.

The specialties are represented by the following distinguished physicians:

Dr. James M. Martin, Dallas, Texas, Roentgenology; Dr. Alfred S. Warthin, Ann Arbor, Mich, Pathology; Dr. Gabriel Tucker, Philadelphia, Alr.; Dr. Frank C. Mann, Rochester, Minn., Clinical Pathology; Dr. Irvin Abell, Louisville, Ky., Obs.-Gyn.; Dr. Nathaniel Allison, Boston, Orthopedic Surgery; Dr. Alan Brown, Toronto, Canada, pediatrics; Dr. Fielding O. Lewis, Philadelphia, Air; Dr. Wm. McKim Marriott, St. Louis, Pediatrics; Dr. Fritz B. Talbot, Boston, Pediatrics; Dr. Wm. B. Hendry, Toronto, Canada, Obs.-Gyn.; Dr. Edward A. Strecker, Philadelphia, Neurology-Psychiatry; Dr. Chas. Herbert Best, Toronto, Canada, Internal Medicine.

Social Calendar

Friday, October 14th—8:00 P. M.: Smoker and Get-to-Gether, (Muehlebach Hotel.)

Saturday, October 15th—7:00 P. M.: Alumni Dinners, (Hotels and Clubs.)

Sunday, October 16th—7:00 P. M.: Buffet Supper (informal), (Mission Hills Country Club—for Distinguished Guests, Sponsors and Visitors.)

Tuesday, October 18th—1:00 P. M.: Luncheon for visiting ladies. 10:00 P. M.: Formal Reception to Distinguished Foreign Guests. (Grand Ball Room—Muehlebach Hotel.)

Wednesday, October 19th—1:00 P. M.: Luncheon for Ladies at Women's City Club. Dr. Wm. D. Haggard and Dr. Jos. Colt Bloodgood as special guests.

Thursday, October 20th—2:00 P. M.: Automobile Drive for ladies and distinguished guests—starting at Muehlebach Hotel, Baltimore Avenue.

Friday, October 21st—7:00 P. M.: Banquet to Distinguished Foreign and American guests. Muehlebach Hotel—Grand Ball Room. (Positively limited to 500.)

THE SOCIETIES

The Madison "Four Counties" Medical Society for August was held at Creighton on the evening of the 23d following a dinner served at the Municipal building. Some thirty were present.

Dr. C. H. Waters, Omaha, read a paper on "Care of the Patient." It has been demonstrated that patients after emergency operations have a smoother convalescence than those who were prepared by a course of calomel and salines. A simple enema before the operation suffices. Less depletion of body fluids gives patient a greater reserve. Post-operatively, fluids must be given early, orally, preferably hot at first, if stomach is retentive, or by the Murphy drip or flush method, or, if rapid absorption is needed as in severe cases, by hypodermoclysis using the subpectoral space, which will receive 1000 cc in a short period. Turning the patient routinely the first 24 hours, raising the back rest a notch a day was favored. Small flat dressings for the abdomen were recommended as giving firmer support, and facilitating the penetration of cold, if needed, from ice bag. Firm bandaging prevents expansion of bowel by gas beyond power of contraction.

Dr. R. D. Schrock, Omaha, read a paper on "Knee Injuries," illustrated by numerous skiagrams.

The Richardson County Medical Society held the August meeting at Humboldt on the 26th. A basket dinner was served at the Christian church after which the ladies were entertained at the home of Mrs. G. G. Gandy while the scientific program was given at the K. P. hall.

Dr. E. R. Hayes, Falls City, read a paper, "Superintendence of Child Health." Dr. E. L. Hustead, Falls City, read a paper on "Treatment of Carbuncles." The baby health conferences held in Richardson county the past two years were discussed and a special committee was appointed to meet with the women's clubs of the county and arrange for a recall of all the children examined a year ago for a special health examination to determine whether baby health conferences are worth while.

The annual picnic of the **Custer County Medical Society** was held in Lang's grove near Mason City, August 16th. An exceptionally interesting program was given.

The Merrick County Medical Society met at the Ratcliff hotel August 20th. Dr. Edwing G. Davis, and C. C. Tomlinson, Omaha, and Dr. J. M. Curtis, Tecumseh, furnished the program.

The Seventh Councilor District will hold its meeting in Superior on Thursday, October 27th, next. The program is not yet complete but amongst others, Dr. B. R. McGrath of Grand Island, Dr. W. O. Colburn of Lincoln, and Dr. G. M. White of Ingleside, will appear on the program.

—Rudolph Decker.

HUMAN INTEREST TALES

Dr. Ralph S. Russel has located at Sutherland.

Dr. and Mrs. A. P. Ginn, Nebraska City, have gone to Europe.

Dr. Robert C. Estill, formerly of Omaha, has located at Bridgeport.

Dr. T. L. Doher, formerly of Wilsonville, has located at Bridgeport.

Dr. H. C. Cameron, Johnstown, has been reported alarmingly ill.

Dr. and Mrs. Leroy Crummer, Omaha, have returned from Europe.

Dr. E. M. Frommer, recently of St. Joseph, Mo., has located in Norfolk.

Dr. P. A. Sundbury, Holdrege, is building an up-to-date office building.

Dr. J. E. Warrick and Mrs. Gertrude Evans, Valentine, were married in July.

Dr. and Mrs. J. B. Potts spent a month motoring in the west in late summer.

Dr. W. H. Slattery and daughter, Lincoln, spent six weeks visiting in Illinois.

Dr. V. E. Berchtold has located in Norfolk in association with Dr. E. C. McAleer.

Dr. H. J. Sloss, for 25 years a practitioner at Blue Springs, has located at Stanton.

Dr. and Mrs. A. E. Cook, Randolph, made a trip to the Minnesota lakes in August.

Dr. and Mrs. Alfred Schalek, Omaha, enjoyed a trip to northern Wisconsin in August.

Dr. Otto T. Hansen, former practitioner at Wausa, has returned and opened an office.

Dr. Claud Palmer, for 21 years in practice at Bridgeport, has moved to Torrington, Wyo.

Dr. G. H. Hall, for several years in practice at Kearney, has located at Tulsa, Okla.

Dr. L. N. Smernoff, Omaha, has purchased the Bethany hospital and will conduct it.

Dr. G. W. Fegers, Nebraska City, visited in Iowa, Illinois and Wisconsin, during September.

Dr. F. B. Hollenbeck and son, Lincoln, spent a month at Cody, Wyoming, in midsummer.

Dr. and Mrs. C. L. Fahnestock, Lincoln, spent their vacation at several Minnesota lake resorts.

Dr. J. M. Greene, Falls City, spent the month of September doing post-graduate work in New York City.

Dr. James S. Wilson of Johnson has opened an office in Nebraska City to do eye, ear, nose and throat work.

Miss Anne Donelan, Glenwood, Iowa, and Dr. W. H. Scoins, Omaha, were married August 15th, at Grand Island, Nebr.

The marriage of Miss Nan Hunter, Riverside, Calif., and Dr. R. A. Moser, Omaha, the latter part of July, is announced.

Dr. Louis J. Frank has become resident physician in pathology at the medical school of the Nebraska University, Omaha.

Dr. J. H. Matthai, superintendent of the State Orthopedic hospital, Lincoln, underwent an operation for appendicitis recently.

Dr. Rugh R. McMeekin, Overton, and Miss Ruth Ann Ferguson, Mountain View, Okla., were married the middle of August.

Dr. and Mrs. C. J. Miller, Ord, spent several weeks of July and August motoring through the Black Hills and Yellowstone Park.

Dr. Charles Heider, Sutherland, has sold his office equipment and will take postgraduate work in surgery at the Mayo clinic.

Dr. N. H. Blakeley, for the past year in practice at Humboldt, has located at Auburn and has become affiliated with the Auburn hospital.

Dr. Frank Conlin, president of the Omaha-Douglas County Medical society recently gave a radio talk over WOW on Omaha as a health center.

Dr. Carleton B. Pierce has been appointed assistant professor of roentgenology and physio-therapy at the Nebraska University College of Medicine.

Dr. Ira Atkinson, Lincoln insurance man, with his wife and daughter, toured the Canadian Rockies and made a trip to Alaska during the summer.

Dr. G. H. Marvel, for twenty-one years a practitioner at Aurora, has moved to Lincoln and has become associated with Dr. C. A. Shoemaker.

Dr. E. H. Worthman, Louisville, made a trip to Chicago recently to consult a specialist and to get some much needed relief from the daily grind.

Dr. J. C. Byers, for several years located at Friend, has closed his office and will do postgraduate work in Chicago and may locate permanently in that city.

The former Paxton Memorial hospital, Omaha, the dream of Dr. Michael Ford and built by him some years ago, has been vacant for some months and is for sale.

Dr. A. J. Edstrom, Stromsburg, sustained severe injuries to his head, the latter part of July, by the overturning of his car in loose gravel on the Meridian highway near Stromsburg.

Dr. E. J. Frost of Wichita, Kansas, while touring, left the distal phalanges of two fingers of his right hand at Norfolk, Nebr., as a result of injuries suffered while attempting to repair his automobile at the latter place.

Dr. Michael G. Wohl, Omaha, has completed a text book on "Bedside Interpretation of Laboratory Findings". The C. V. Mosby Company of St. Louis has accepted it for publication. The book will appear shortly after the new year.

Dr. M. N. Newquist, Bloomfield, recently had the unique and distressing experience of being caught in a heavy rainstorm with a new car and have the floodwaters leave a heavy coating of mud within the body and seep into the engine.

NECROLOGY

Edward W. Lee, New York City; University of Michigan, 1881; Columbia University, 1882; practicing surgeon in Omaha from about 1883 to 1901; professor of surgery, Omaha Medical College, 1884; professor of surgery Creighton University College of Medicine, 1890-98; practicing surgeon New York City since 1901; one of the surgeons called upon to minister to President McKinley, at Buffalo, on his assassination by Czolgosz; an active member Nebraska State Medical Society during his residence in the state; died at his summer home at Randolph, N. Y., October 4, 1927, aged 68 years.

John W. Carothers, Lincoln, Nebr.; Lincoln Medical College, 1913; member Nebraska State Medical Association; died August 30, 1927, after a long illness, aged about 43 years.

George F. Pugh, Watertown, S. D.; University of Nebraska College of Medicine, 1898; practitioner at Platte Center, Nebr., for about 16 years from 1898 to about 1914; later in practice at Florence, S. D., died recently at the age of about 65 years.

Dr. Joseph Adolphus, for many years a practicing physician at Lincoln, died at Hot Springs, S. D. Life history not available.

BOOKS RECEIVED

AN OUTLINE HISTORY OF OPHTHALMOLOGY by Thomas Hall Shastid, A. M., M. D., F. A. C. S., Sc. D., LL. B. Cloth. 600 pages. Price $1.25. American Optical Company, Southbridge, Mass.

TRANSACTIONS OF THE COLLEGE OF PHYSICIANS. Third Series Vol. XLVIII. Edited by Walter G. Elmer, M. D. Cloth. 8 mo. Philadelphia.

HEART AND ATHLETICS by Dr. Felix Deutsch and Dr. Emil Kauf. English translation by Louis M. Warfield, A. B., M. D. Cloth. 187 pages. 8 mo. Price $2.50. C. V. Mosby Co., St. Louis, Mo., 1927.

CITY HEALTH ADMINISTRATION by Carl E. McCombs, M. D. Cloth. 8 mo. 524 pages. The Macmillan Company, New York. 1927.

PHYSICAL DIAGNOSIS by Richard C. Cabot, M. D. Cloth. 16 mo. 536 pages with six plates and 279 figures in the text. Price $5.00. The Messrs. William Wood & Company, New York. 1927.

EXAMINATION OF CHILDREN BY CLINICAL AND LABORATORY METHODS by Abraham Levinson, B. S., M. D. Cloth. 8 mo. 192 pages with 85 illustrations. Price $3.50. C. V. Mosby Company, St. Louis, Mo. 1927.

TIGER TRAILS IN SOUTHERN ASIA by Richard L. Sutton, M. D., Sc. D., LL. D., F. R. S. Cloth. 8 mo. 206 pages with 115 original illustrations. Price $2.25. C. V. Mosby Co. St. Louis, Mo. 1926.

PRINCIPLES OF CHEMISTRY by Joseph H. Roe, Ph. D. Cloth. 8 mo. 378 pages with Laboratory experiments. Price $2.50. C. V. Mosby Company, St. Louis, Mo. 1927.

MANAGEMENT OF THE SICK INFANT by Langley Porter, B. S., M. D., M. R. C. S., (Eng.), L. R. C. P. (Lond.), and William E. Carter, M. D. Cloth. 8 mo. 726 pages. Price $8.50. C. V. Mosby Company, St. Louis, Mo. 1927.

POTASSIUM AND TARTRATES by Ralph W. Webster, Ph. D., M. D. Cloth. 16 mo. 168 pages. Price $2.50. The Commonwealth Press, Inc., Chicago. 1927.

DISEASES OF THE EYE by Charles H. May, M. D. Cloth. 12 mo. 445 pages with 23 plates and 73 colored figures. Price $4.00. The Messrs. William Wood & Company, New York. 1927.

THE NEW MEDICAL FOLLIES by Morris Fishbein, M. D. 8 mo. 235 pages. Cloth. Price $2.00. Boni and Liveright, New York. 1927.

SHOULD WE BE VACCINATED? by Bernhard J. Stern. Cloth. 8 mo. 146 pages. Price $1.50. Harper & Brothers. New York & London. 1927.

The girls wear skirts exceedingly short;
Their knees are often bare,
Their bathing suits are works of art,
But mother doesn't care.

Dear father, whom they criticized,
For what they called a lack of taste,
Appeared one day without a tie
And the family felt disgraced.
—Selected.

DIET IN TREATMENT OF CARDIAC FAILURE

Clinical and experimental observations seem to indicate that milk and carbohydrates, particularly those forms of the latter which are easily assimilated, should constitute the major portion of the diet in cardiac failure. A diet has been used by Fred M. Smith, R. B. Gibson and Nelda G. Ross, Iowa City (*Journal A. M. A.,* June 18, 1927), which has an energy value of 2,100 calories and consists of 44 Gm. of protein, 110 Gm. of fat and 222 Gm. of carbohydrate. It is served in the form of milk, cream, butter, eggs, vegetable purees, cooked cereals and fruit juices. The carbohydrate is further increased by the addition of sugars, as dextrin-maltose, dextrose and lactose. Small and frequent feedings are given to avoid gastric retention and fermentation. When edema is present, the liquid intake is limited to 1,500 cc., and the salt is reduced to a minimum. Usually on the third or fourth day other foods, as jelly, crackers (salt free), toast and stick candy, are added. Later, about the eighth day, depending on the condition of the patient, pureed fruits and additional pureed vegetables are incorporated in the diet. Gradually, the consistency of the food is changed from that of the soft to the light diet. In some instances, following the elimination of the excess fluids, particularly in those patients who are greatly undernourished, the energy value of the diet is increased to approximate 3,000 calories. However, when the patient is obese, the diet is sufficiently reduced to permit a gradual loss in weight. All patients with cardiac failure, with individual exceptions, were treated in the same way. They were put to bed at absolute rest. When necessary, codeine or morphine was administered hypodermically at bedtime to promote sleep. Cascara or other mild laxatives were employed when needed to produce a daily bowel movement. From 15 to 20 minims (0.9 to 1.25 cc.) of tincture of digitalis was prescribed three or four times daily, depending on whether or not the patient had previously taken the drug. The routine hospital soft diet was served. The liquid intake was limited to 1,500 cc., and the urinary output was recorded. The patient was weighed daily when the condition permitted. If after a period of from five to seven days there was no demonstrable change in the general condition and the weight remained stationary, the cardiac diet was prescribed. The favorable influence of the diet is illustrated by five cases reported. The results emphasize the importance of diet in the treatment of cardiac failure. They demonstrate that a change in this feature of the treatment alone may be sufficient to promote the elimination of the excess fluid after the usual remedies have failed. The effectiveness of the diet is believed to be due to the energy value and the form in which the food is given. It is felt that patients with cardiac failure, especially those in whom the condition has existed for some time, should have at least a diet that will maintain a normal metabolism.

SOME OBSERVATIONS REGARDING DIPHTHERIA IMMUNITY

Wilfred H. Kellogg and Ida May Stevens, Berkeley, Calif. (*Journal A. M. A.,* July 23, 1927), have found that the Schick test and the guinea-pig for diphtheria immunity give parallel results in primary tests. In persons who have been immunized with toxin-antitoxin and a negative Schick test obtained, some show no antitoxin by the Kellogg method; in the authors' series it was from 20 to 25 per cent. Most of these show traces when tested for small amounts by the Romer method, but a few do not show any at all. These persons are latently immune, because they quickly develop antitoxin in titratable amount if given a secondary stimulus in the form of a single injection of toxin-antitoxin and at times even as small a stimulus as the Schick test. There is an essential difference in the permanence of the free antitoxin in the circulating blood of the naturally immune and those artificially immunized. This difference, together with the fact that the naturally immune as shown by the Schick test always have free antitoxin while the artificially immune do not always have it, suggests that natural immunity may not exist solely by reason of exposure to infection, but may be, in part at least, a physiologic occurrence.

LIVER EXTRACTS IN ANEMIA

The striking effect of feeding liver and certain preparations of liver on a number of physiological processes has been established. In the case of growing animals, it appears to promote rapid gains in size. The extraordinary effect of diets including liver on severe anemias of long standing in dogs has been shown. Vigorous regeneration of hemoglobin and red blood cells can be brought about by feeding the hepatic tissue of various species, beef, pig, sheep, calf and chicken having been tested with unquestionable success. Striking effects have been obtained in pernicious anemia with diets containing large amounts of liver in one form or another. Studies undertaken to determine the constituents of liver which are effective in pernicious anemia have been made and potent concentrates have been obtained. (*Jour. A. M. A.,* August 13, 1927, p. 524).

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NON-SPECIFIC PROTEIN (TYPHOID VACCINE) THERAPY OF DISSEMINATED SCLEROSIS*

Preliminary Report of Results in Eight Cases.

G. ALEXANDER YOUNG, M. D., AND A. E. BENNETT, M. D.,
Omaha, Nebr.
From the Neurological Department of the University of Nebraska College of Medicine.

The treatment of disseminated sclerosis as in any other chronic progressive disease in which the etiology is unknown has had multitudinous therapeutic attempts.

Arsenic in various forms has enjoyed the most popular vogue since Gowers first recommended its use 35 years ago. Most authorities have recommended sodium cacodylate injections in doses of 3-4 of a grain to 3 grains daily. This drug has seemed to hasten and prolong remissions of the disease.

It has been felt by most authorities that the etiology of multiple sclerosis must be infectious. The frequent occurrence of the disease following acute infectious diseases such as influenza, typhoid, scarlet fever, measles, rheumatic fever, etc., has favored a bacterial origin of the disease. Several investigators, Spiller(1), Byrnes(2), and others have believed that syphilis in some way influenced the development of multiple sclerosis and have suggested antisyphilitic treatment in the disease. This theory seemed to be strengthened by the work of Kuhn, Steiner, Siemerling, Marinesco and Kalberlach(3), who have found spirochetes similar to the spirochete ictero hemorrhagica of Weil's disease and have reported varying degrees of success in the experimental inoculation of guinea pigs and rabbits from cerebrospinal fluid of the disease. Teague(4), in an attempt to corroborate these findings, was unsuccessful and more recently Collins and Noguchi(5) were unsuccessful in substantiating a spirochetal etiology by inoculating animals with cerebrospinal fluid of the disease. On the basis of the spirochete theory the arsphenamines have been used extensively in the treatment. More recently silver arsphenamine has been advocated largely by German workers (Schmitt(6) and Kalberlach). Antimony preparations have been tried along with arsphenamine in the therapy of multiple sclerosis by Delius(7) in 13 cases. He reports 6 cases with clinical remissions and 9 cases improved, some with no effect and poisoning in one case with large doses.

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*Read before annual meeting Nebraska State Medical Association, Lincoln, May 10-12, 1927.

Because of the striking remissions seen in paresis as the result of malarial inoculation this form of treatment has also been tried in multiple sclerosis with indefinite results(8). In the Wagner Jauregg Klinik it was thought that disseminated sclerosis was the result of some intestinal infection. Vaccines of various intestinal bacteria were tried and typhoid was found to be the most suitable. Since then various workers have during the last four years been using this treatment usually combined with arsphenamine injections. MacBride and Carmichael(9) treated 70 cases at the National Hospital, London, with typhoid vaccine inoculations and silver salvarsan. As a result of their observations they conclude this method of treatment offers more satisfactory results than any other recognized method.

McAlpine(10) states that typhoid vaccine as non-specific protein treatment probably improves the disease from repeated protein shocks and that it seems to have a favorable effect in some cases in bringing about a remission. No cases were reported by him.

The most extensive study found in the literature was by Schacher(11), who used a combined treatment of calcium, neoarsphenamine, and typhoid injections. He used calcium chloride because of its antispasmodic effect in hypertonic muscular conditions. His final technic was to dissolve the neoarsphenamine in 10 per cent calcium chloride solution, using 10 cc. He gave two injections a week, one of calcium chloride combined with typhoid vaccine and arsphenamine and one of calcium chloride and typhoid vaccine. Although he used the typhoid for the development of a febrile reaction he did not believe high fevers were essential in the treatment but that subfebrile or low fever reactions were preferable.

The typhoid vaccine was given first subcutaneously, one cc. of 250,000,000 bacteria. Then intravenous injections were begun with very small doses, and gradually increased until one cc. undiluted was given intravenously without reaction. 87 patients were followed through with this treatment. The author gave the following results in 64 cases: 40 were very much improved, 6 of the 40 without symptoms, 16 were improved and 8 unchanged. By "very much improved" he meant a disappearance of subjective symptoms but a persistence of slight objective spastic signs such as light clonus, light ataxia, and exhaustible Babinski reflex. In the 6 without symptoms all objective findings were absent except sluggish or absent abdominal reflexes. and increased tendon jerks. In the improved cases subjective symptoms remained but were fewer than at the beginning while objective spastic signs persisted. On the whole his results were best where the disease had been of short duration. In cases of over 5 years' standing no complete remission could be produced. A decided improvement was seen in one patient of 39 years with the disease of 8 years' duration.

The author concludes that prompt remission can be produced by the therapy in suitable cases with at times astonishing results. He finds that the cranial nerve palsies and cerebellar symptoms quickly disappear but the spastic findings are more difficult to improve.

We have attempted to carry out the typhoid vaccine, non specific protein injections alone without other drug treatment, in an attempt to ascertain the merit of this form of treatment. In a disease such as disseminated sclerosis where we have a chronic intermittently progressive disease, subject to spontaneous remissions or apparent cure which may last for a number of years, any conclusions relative to therapeutic results must be carefully drawn.

Our usual technic of typhoid administration has been to give the first and second doses of 250,000,000 and 500,000,000 bacteria per cc. subcutaneously, at weekly intervals; then beginning intravenously with ½ m. of vaccine diluted with sterile water or sodium chloride solution. The injections are given every 4 days depending upon the severity of the reaction for dosage but usually increasing the dose 1 m. each time until 1 cc. is given intravenously without reaction.

The following cases are offered in a preliminary report of the results obtained by this method. These cases are the only ones that we have been able to follow closely or that we felt had been given sufficient treatment to be worthy of report.

Case 1. E. B., an Italian boy, age 16, had influenza and pneumonia in 1918. In 1924 he had an acute constipation that required hospital treatment. In July, 1925, difficulty in urination began, which led to incontinence within a few days. Amblyopia occurred at the same time, leading to practical blindness within one week. Paresthesias of arms and legs associated with motor weakness occurred and within one month a spastic paraplegia had developed.

When examined first on August 1, 1925, a marked motor weakness of all extremities and abdominal muscles of the spastic type was present. Exaggerated tendon reflexes, bilateral Hoffmann and Babinski phenomena were present. An atypical Brown Sequard syndrome from the first dorsal region down, with pain sensation absent on the right side and vibration sensibility absent on the left side, but with the sense of position unimpaired was present. Opthalmoscopic examination revealed a marked optic neuritis. All laboratory examinations including spinal fluid cell count, total protein content, sugar estimation, Lange gold curve, and Wassermann were negative.

On October 19, 1925, the patient was admitted to the University Hospital. The neurologic status revealed the above findings, and in addition dysarthria, dysphagia, diplopia, nystagmus and cerebellar signs of ataxia were present. The patient was completely bed ridden.

Typhoid vaccine therapy was begun. After the second injection the vision improved and his right leg was stronger. Intravenous injections were given about every four days. Usually no febrile reaction occurred but on one occasion a fever of 104° was present. A tonsillectomy was also performed. After six weeks the patient walked out of the hospital, subjectively well. All objective findings except the spastic signs had disappeared. Treatment was continued in the outpatient clinic until 12 intravenous injections had been given. Neurologic examination at this time showed only exaggerated patellar reflexes, absent abdominal reflexes, and at times an equivocal Babinski toe phenomenon. Eye grounds showed a mild post neuritic type of atrophy. This patient feels entirely normal and is able to engage in athletics such as foot racing without handicap. He is working steadily as a laborer at present.

Comment: This patient had an acute exacerbation of a chronic remitting type of multiple sclerosis. The sudden development of blindness from optic neuritis in multiple sclerosis is unusual but occurs.

A complete clinical remission occurred coincident with the administration of repeated protein shocks, presumably the result of treatment. His recovery from the bed ridden stage was so striking that the observers of the case were all inclined to credit treatment with aiding recovery.

Case No. 2. Miss L. J., age 18 years, was referred to the office September 30, 1925. In 1918 the patient had influenza and felt weak for one year afterwards. In the spring of 1924 paresthesias and weakness were present in the legs for two weeks. About September 20, 1925, the patient felt "grippy" and numbness appeared in the left arm. Within a week paresthesias were present in all four extremities, associated with muscular weakness and a stumbling gait.

Office examination revealed: Hypalgesia and hypesthesia over the dorsum of the hands, weakness of right leg muscles especially the dorsiflexors, indefinite patchy hypalgesia over both legs to the waist line. Diminished vibratory sensibility was present in both legs. Tendon reflexes were exaggerated and an abortive clonus with indefinite Babinski reflexes was present. The spinal fluid was normal except for a paretic Lange gold curve which was present on two examinations. Under observation in the hospital Rosetts' induced hyperpnea test was carried out. After 15 minutes of forced breathing definite spastic signs appeared in all four extremities. On Oct. 11, 1925, a left third nerve palsy appeared. During a stay of several weeks silver arsphenamine injections were given with no marked improvement. She was then sent home to receive the typhoid vaccine treatment by her family physician. For one month the patient was given sodium cacodylate and iron citrate hypodermics bi-weekly, without apparent benefit. Then typhoid vaccine treatments were begun and she was given 14 injections at three day intervals, all subcutaneously. An unexplained afternoon fever developed in Feb., 1926, so that the treatment was discontinued. The patient's family and physician felt she was improved until the fever began and on the whole believed the patient was improved. On April 15 the patient again came to the hospital for a 6 weeks' observation. A complete examination at this time showed definite objective improvement over the former examination. The tendon reflexes were exaggerated and vibration sensibility was still diminished over the legs but the epicritic sensibility, ataxia, Babinski and cranial nerve palsies were absent. Typhoid vaccine was begun intravenously. A febrile reaction with chills, headache, fever of 101° and a temporary exaggeration of the paresthesias occurred with the first two injections. The patient soon began to walk with much less ataxia and left the hospital without subjective complaints. She continued to improve and for four months after discharge continued to receive the injections until twenty intravenous injections were given. During the fall and winter of 1926, the patient remained improved. A recent letter states there has been some return of symptoms (parasthesias) and the patient is returning for a new examination.

Comment: This case presented the typical symptoms and findings of multiple sclerosis developing after influenza. Apparently the condition was progressive and the improvement under treatment makes one feel that treatment was at least responsible for a temporary remission. We class her case as one showing partial remission under treatment. Further observation will be necessary before drawing definite conclusions, as the recent communication suggests relapse.

Case No. 3. Mr. C. K., age 42, came to the office February 18, 1926, complaining of weakness of the right arm and both legs. In 1919 the patient was critically ill with influenza for three weeks. In 1922 weakness and ataxia gradually developed in the right arm and leg. About one year ago weakness began in the left leg. Diplopia had been present at times.

The neurologic findings were: Vertical and lateral nystagmus, motor weakness of the right hand, adiadokokinesia and ataxia of the right hand, exaggerated arm reflexes with Hoffman's phenomenon, sluggish abdominal reflexes, spastic weakness of the lower extremities with bilateral Babinski toe phenomena. A complete spinal fluid study was negative.

Typhoid vaccine treatment was begun in the hospital. Two subcutaneous injections of the usual prophylactic doses were followed by intravenous injections. The first febrile reaction (102.6°) came after the second intravenous injection. The patient was then sent home for continued treatment by his family physician. The treatments were carried out faithfully and the patient reexamined after six months' treatment. He had received in all 20 intravenous injections and had reached the point where he no longer developed systemic reaction. There was no change in the patient's subjective or objective findings. In a personal communication from the patient November 6, 1926, he stated there was no improvement in the use of the limbs and that he had received no benefit from treatment.

Comment: In this case there is no history of clear cut remission in the symptoms extending over a period of four years. The disease seems to be a slowly progressive condition and after a fair trial of the vaccine therapy we could see no improvement. He belongs to the predominantly spastic type which Schacher states is the type most difficult to relieve.

Case No. 4. Mr. J. A. W., age 24, was referred January 21, 1926. The patient's history was unimportant until 1922, when stiffness of the back muscles began. This condition was worse in the winter and improved during the summer. Stiffness and sticking pain came in the legs along with the stiff back muscles. These symptoms were so severe at times that he was confined to bed and he had been incapacitated from work for one year.

The positive neurologic findings were: Sluggish mental reaction, slight blurring of the optic discs, speech defect, exaggeration of all tendon reflexes with markedly spastic limbs, bilateral clonus and Babinski reflexes. The spinal fluid examinations were all normal. The typhoid vaccine therapy was given by his physician over about a three months' period. When examined one month after treatment was begun, subjectively the patient felt much improved, less stiffness was present in the muscles, and his pains had disappeared. Objectively the patient's gait was improved and he was able to carry out all muscular movements better. There was no change in the pyramidal tract signs. Treatment was continued until 12 m. of vaccine was given intravenously, when the patient returned to work and has continued to feel well. The spastic extremities were definitely improved and the patient felt relieved.

Comment: This case is of the predominantly spastic type but with tendency to remissions of symptoms. It was felt by his physicians and the patient that he was markedly improved.

Case No. 5. Mrs. H. O., age 38 years, came to us March 24, 1926. The past history was unimportant for previous infections. The onset of the present illness is indefinite, but probably began about 1910 when the patient had an attack of hemianesthesia and hemiparesis which disappeared. Since then spells of nervous muscular jerking and difficulty in walking have been present at times, usually worse in the winter. Paresthesias have been present at times over the right side. All symptoms have been worse since January, 1926, when marked paresthesias and spastic ataxic paraplegic symptoms developed to the point of helplessness.

The nerologic findings were concentric diminution of the visual fields, exaggerated tendon reflexes of arms and legs with spastic signs, bilateral Hoffman and Babinski reflexes and absent abdominal reflexes, moderate ataxia of the legs with diminished vibration sensibility in the legs. The patient was unable to walk unassisted; the gait was of the spastic ataxic type.

Free hydrochloric acid was absent in a three hour fractional gastric analysis. The spinal fluid cell count was 10 per cm., proteid content 150 mg. per 100 cc., Wassermann negative, the Lange gold curve was in the paretic zone.

Typhoid vaccine therapy was begun with two subcutaneous injections followed by gradually increasing intravenous injections. After the first intravenous injection fever of 102° resulted and the patient had transient blindness and exacerbation of her symptoms. Within a few weeks the patient felt generally stronger and was walking about the hospital unassisted. She was receiving 4 m. of vaccine when discharged after two months' vaccine treatment.

In a personal communication from the patient November 8, 1926, six months after cessation of treatment, she stated: "I am feeling well and I get about as good as I ever did. I see a big improvement every month. My doctor has told me my improvement is wonderful. Everybody tells me I look better than I have for years. I am gaining in weight and have started going to my clubs as always, when I was well." A recent letter states she has had no return of symptoms, but describes some stiffness of her muscles in the mornings—probably from spasticity.

Comment: This case represents a very chronic intermittently progressive type of the disease, extending over a period of at least 15 years. No hope was entertained for recovery in her condition, but it was quite apparent that treatment had in some way ameliorated her subjective symptoms and lessened the spasticity, although no objective changes were noted. According to her letter she has apparently developed a complete remission of symptoms.

Case No. 6. Miss M. S., age 30, first consulted us March 16, 1926. The past history was unimportant. In 1924 ataxic gait and spastic stiffness of the legs began. The condition remained stationary except after muscular exertion when the symptoms would be more pronounced. During the last few months paresthesias of the legs and right hand with increasing weakness and awkwardness had been present. Difficulty in starting micturition had been experienced.

Examination revealed a markedly spastic ataxic gait, absent abdominal reflexes, exaggerated arm and leg reflexes with bilateral Babinski reflex phenomena. Laboratory examinations including spinal fluid studies were normal. The Lange gold curve was not done.

Typhoid vaccine therapy was begun with the patient continuing her occupation as a school teacher. Injections were given at week ends so the patient could remain in bed. Three subcutaneous injections were given, followed by the usual intravenous injections. With the second intravenous injection of vaccine a severe febrile reaction developed and for a few hours the patient had paresthesias from the waist down and was unable to use her limbs. Treatment was given over a period of three months with at times slight improvement but on the whole there was very little subjective or objective improvement in the course of the disease. An examination in April, 1927, revealed the patient's subjective and objective condition unchanged.

Comment: This case seemed to be a steadily progressive, not the remitting type of the disease. We did not feel that the treatment improved her condition. Further treatment might aid in developing a remission, since some observers have observed improvement in a second course of vaccine, even after no improvement occurred in the first course.

Case No. 7. A. R., age 16, came to the office, June 7, 1926, complaining of weakness of both hands and legs, double vision, and paresthesias. In the past history for 4 years the patient had had attacks of influenza-like infection. The nervous disorder began with diplopia in 1924, followed by weakness of limbs upon exertion. In 1925 ataxic symptoms developed in the arms and legs. In February, 1926, girdle sensation about the abdomen developed.

The examination revealed the following: Nystagmoid movements, temporal pallor of the optic discs, left Hoffman reflex, ataxia in both arms, absent abdominal reflexes, spastic ataxic weakness in both legs, with ankle clonus and Babinski reflexes present. Vibration and sense of position were unimpaired.

Typhoid vaccine therapy was begun and continued in the office over a period of four months. Frequent examinations revealed no definite improvement either in subjective symptoms or objective findings. We have discontinued further treatment, the patient having moved from the city.

Case No. 8. Miss L. B., age 18 years, was well until October, 1925, when amaurosis of the right eye was present for one month. A few months later the same transient blindness was present in the left eye. The amaurosis again returned in the right eye in August, 1926. In October, 1926, numbness and motor weakness appeared over the right side of the body. The gait became difficult and the speech slowed.

Examination on October 10, 1926, revealed: Temporal pallor of both optic nerves, pupillary inequality, moderate motor weakness of the right hand grip, hypalgesia and hypesthesia of patchy type over the right arm. Tactile discrimination was normal over the right hand. The abdominal reflexes were absent, hypesthesia hypalgesia and vibratory diminution were present over the right leg. A positive Babinski was present on the right side. The spinal fluid studies were all normal.

Progress: The patient was under observation for six weeks in a hospital. Vaccine therapy was carried out in the usual manner. Nine injections were given intravenously, and febrile reactions usually occurred. At one time a temperature of 105° developed after the injection. The amblyopia became more intense; at times the patient could not recognize such objects as a knife at 24 inches. Within 48 hours after the injections the vision would return to normal.

The patient returned home feeling much improved and continued the treatment from the family physician. She reported at regular intervals. The injections were continued until about March 1, 1927. No further trouble was experienced with the vision. About April 15 the weakness suddenly returned in both legs. A new examination April 25 revealed a return of pyramidal tract signs in the lower extremities, but the cerebellar and cranial pathways were apparently unaffected. A course of silver arsphenamine is now being given. We expect to give a second course of vaccine later.

Comment: This case is another of the remitting type, making it impossible at this time to evaluate any therapeutic efforts. The cranial nerve symptoms, especially the blindness, and the cerebellar signs disappeared while under treatment. Shortly after the cessation of treatment pyramidal tract symptoms developed. It is possible that further treatment at this point would have prevented the relapse. Up to date this case has been classified as unimproved under the vaccine treatment. We expect to persist in our efforts to obtain a long remission in this case.

Remarks on the eight cases. Duration: The shortest period of illness was 6 months, the longest period a chronic remitting type of about 15 years. Two cases had the disease about 4 years and 4 about 2 years.

Etiology: In 3 of the 8 cases a severe influenzal attack preceded or accompanied the onset of the neurologic symptoms. In the other 4 no etiologic factors could be elicited.

A paretic zone Lange colloidal gold curve was present in 2 cases, absent in 4, and not run in 2 cases. This change in the gold curve occurs in 50 per cent of cases according to most observers. This finding in the absence of a positive Wassermann suggests multiple sclerosis. It is a valuable laboratory aid in diagnosis when positive.

Seven of the 8 cases showed both pyramidal tract and cerebellar pathway involvement. One patient alone had only pyramidal tract disease. Six of the 8 patients had varying degrees of eye ground changes, varying from diminution of the visual fields to optic neuritis.

Some observers might classify our influenzal cases as encephalomyelitis; to us they have been indistinguishable clinically from disseminated sclerosis.

No harmful results have been seen following the injections. The immediate reaction exacerbates the existing symptoms, probably from acute transient edema of the patches of sclerosis. Care is necessary in working up the dosage and especially with the first intravenous injections, if one is not sure, it is better to start with ¼ minim.

Summary: In 8 cases of multiple sclerosis the effects of typhoid vaccine therapy upon the disease have been studied. No conclusions as to the value of this form of treatment in the two year period that we have used it can be drawn. The following facts have been observed thus far. Out of the 8 patients one developed a complete remission with relief of all subjective symptoms and disappearance of practically all objective findings. Three patients developed partial remissions with marked improvement in the subjective symptoms and less in the objective findings. Of these cases one was of 15 years' standing. Three patients have held their remissions over one year. In one, according to the patient's statement, some symptoms are again returning. Four of the patients remained unimproved subjectively and objectively 2 of these were of the predominantly spastic type.

The treatment gives sufficiently encouraging results to warrant further trials and apparently does something more for the patient than the previous conventional lines of therapy.

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THE UNIVERSITY OF NEBRASKA HOSPITAL AT OMAHA

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The University of Nebraska College of Medicine at Omaha has just completed the second unit of the University Hospital and now has one of the best teaching hospitals in this country. It seems appropriate at this time, since this is a State and a University institution, to outline the development of the College of Medicine and to present in some detail the organization and plan of the University Hospital.

HISTORICAL

The University of Nebraska College of Medicine succeeded the Omaha Medical College which was established in 1881. In 1903 the University of Nebraska entered into an agreement of affiliation with the Omaha Medical College under which the University gave the first two years of instruction in Lincoln and the Omaha Medical College was responsible for the last two years in Omaha. This agreement was terminated in 1913 when the University formally took over instruction in all four years of Medicine. The action of the Board of Regents in undertaking responsibility for the full course in Medicine constituted a revival of the College of Medicine of the University which was established on the Lincoln campus in 1883 and discontinued in 1888. Coincident with this act the full four years of instruction in Medicine was established in Omaha on the present campus at Forty-second and Dewey Avenue.

The first building on this campus was the present North Laboratory Building, erected in 1913 at a cost of one hundred thousand dollars, and housing all departments of the College. The total enrollment this first year was 84, compared to 301 in 1927. Clinical facilities were obtained by affiliation with the Douglas County Hospital and several private hospitals of Omaha, and by maintenance of a Dispensary at 1716 Dodge St. It soon became evident that proper bedside clinical instruction could not be maintained without a University Hospital under the supervision and control of the College of Medicine. Accordingly, the Legislature of 1915 appropriated one hundred and fifty thousand dollars for the purpose of providing a teaching hospital which would be under the control of the Board of Regents and would care for the worthy sick poor of the state. This first unit of the University Hospital was

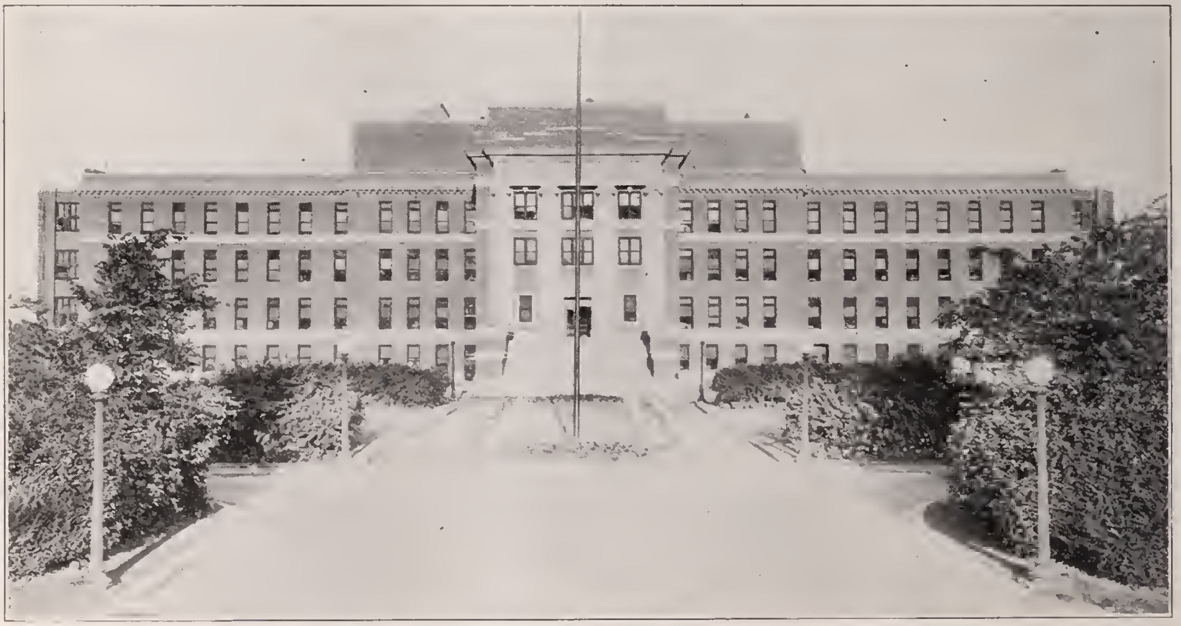

Fig. 1. University Hospital—Unit No. 1.

completed in 1917 and consisted of a main hospital wing extending north and south, and an administration wing on the front or east side.

The College soon outgrew the North Laboratory Building, and in 1917 one hundred and eighty thousand dollars was appropriated to erect the South Laboratory Building. This was completed in 1919 and the Dispensary, which had been maintained down town, was transferred to the ground floor of this building. The College now had all necessary facilities for the teaching of medicine located on the campus, and it progressed rapidly in its organization and standing among medical colleges of the country. The student enrollment at this time was 181.

The Nurses' Home was added in 1923, since the nurses had been housed in a temporary wooden dormitory and a fire on December 22, 1922, had seriously threatened their lives and partly destroyed the building. This gave an impetus to the University Training School for Nurses, which, with the beginning class of September, 1927, had an enrollment of 108, and is no small part of the educational service of the College of Medicine.

The increased emphasis on clinical teaching, and the increased enrollment from 143 in 1917 to 301 in 1927, made the first unit of the University Hospital insufficient to provide clinical cases for bedside study by the senior and junior students who had increased from 46 in 1917 to 120 in 1925. To remedy this situation, the Board of Regents allowed, from the University building appropriation of 1925, an item of two hundred thousand dollars to erect a second unit of the University Hospital. This is the building which has been completed this year and will be formally opened in November.

ORGANIZATION

The University Hospital was founded primarily as a teaching hospital for the College of Medicine. Accordingly it is placed under the control of the Board of Regents of the University, and the Dean of the College of Medicine is ex-officio Superintendent of the Hospital. The funds for maintenance come from the University Budget and all of its beds are devoted strictly to medical teaching. Its status as a teaching hospital necessitates maintenance of the highest standards in the care of its patients and in the maintenance of hospital records. The patients who are admitted to the University Hospital profit from this very thorough study of their illness and by consultation of the most prominent physicians and surgeons of Omaha who are members of the Clinical Faculty of the College.

The purpose for which the hospital was founded necessitates selection of cases which are admitted, since they must be instructive in medical teaching, and if chronic or incurable cannot be kept in the hospital longer than a period of a few weeks. Very common clinical cases can be admitted only in limited numbers, since each branch of medicine must be properly represented and is allotted a certain number of beds which number must be maintained within reasonable limits. The hospital could easily be filled with chronic or incurable cases or with a few common types of surgical cases and there would be no teaching material in other more important branches of medicine. The Board of Regents of the University would not be justified in maintaining such a hospital which would be of little benefit to the College of Medicine, and accordingly have approved the following rules which are intended to incorporate the preceding points of proper maintenance, and also to assist in effective administration.

REGENTS RULES

(1) The University of Nebraska Hospital at Omaha is founded primarily as an educational institution in which the best methods in diagnosis and treatment are practiced and taught in the College of Medicine. It serves the additional function of state medical care of eligible patients. It is not founded with the idea of receiving patients who are able to pay for private medical and surgical care, nor for chronic and incurable cases which require institutional care.

(2) Worthy sick, except as hereinafter specified, shall be admitted upon receipt by the hospital authorities of a written application, stating that the patient needs medical or surgical attention and that he is unable to pay for professional services. The application shall also state whether or not the patient is able to pay for board and nursing while in the hospital. The application must be signed by a physician legally qualified to practice in the county in which the patient resides, and by either County Attorney, County Judge or one member of the Board of County Supervisors. Emergency cases requiring immediate attention will be admitted regardless of financial status or application and charged private patient rates if able to pay for professional services.

(3) The Hospital authorities reserve the right to determine the financial status of any patient and fix the rate per day for board and nursing. A patient who is found to have entered under false representation of financial status will either be discharged immediately or charged private rates if treatment has been begun which cannot be interrupted.

(4) No member of the Hospital Staff shall receive compensation for professional services from any hospital patient, unless specially authorized by the Superintendent.

(5) The admission of patients to the Hospital will necessarily be limited to the number of unoccupied beds on the service to be entered. Eligible patients will be admitted insofar as possible according to county quota. Special consideration will be given to applications from out-state counties where hospital facilities are lacking. The fact that a county quota has not been filled will not permit the admission of ineligible patients. If admission is desired by a patient from a district which already has used its full

quota, admission may be granted by the hospital authorities only when in their judgment exceptional conditions so warrant.

(6) The following diseases will not be treated at the Hospital: Acute contagious diseases, pulmonary tuberculosis, epilepsy and leprosy.

(7) The hospital authorities are empowered to refuse admission to such chronic cases as cannot in their judgment be benefited by hospital treatment. This power also applies to cases requiring institutional treatment and to such diseases as the hospital authorities may see fit in the best interests of the College of Medicine and the public to exclude.

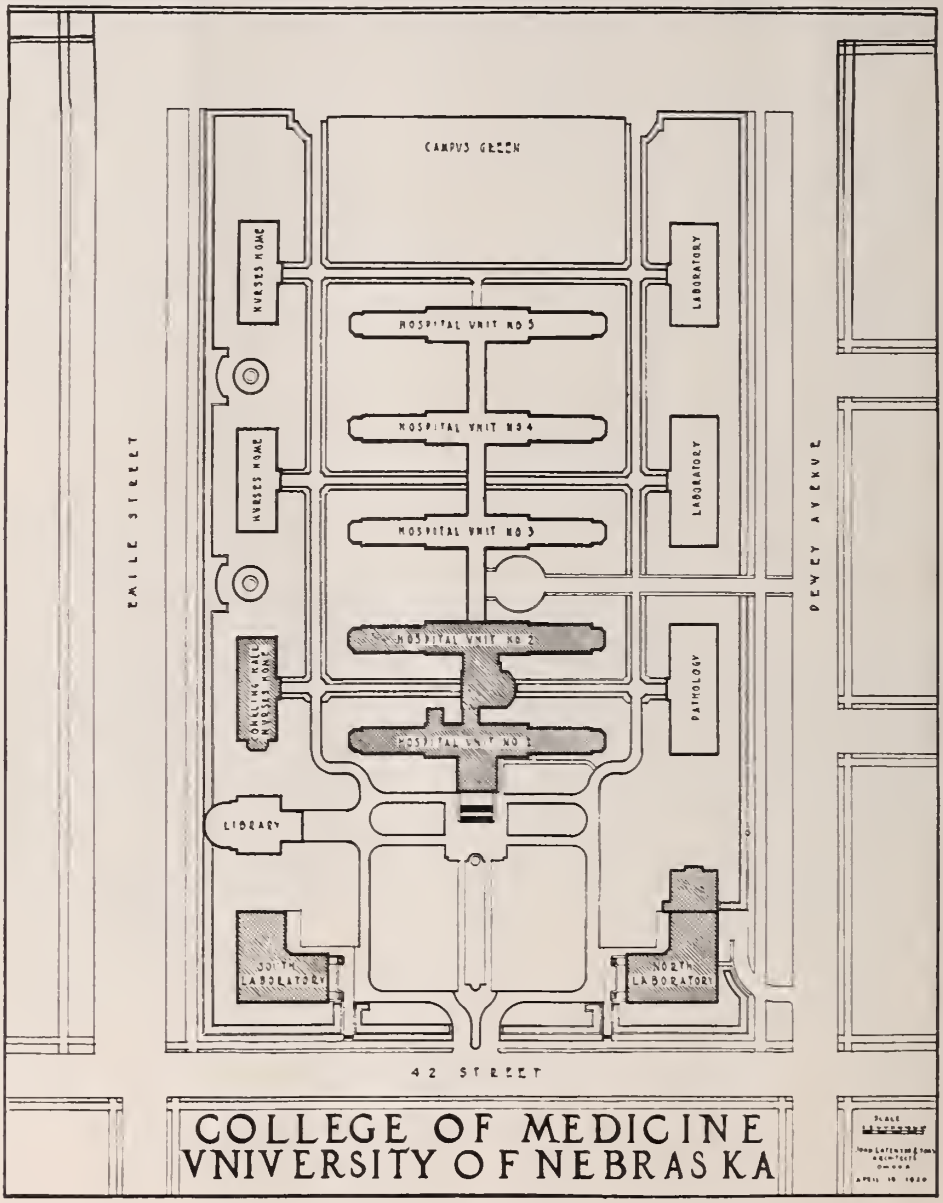

Fig. 2. Ground Plan of Medical College Campus.

(8) Physicians desiring to secure admission of patients to the Hospital, should communicate by letter or telephone with the admitting physician and secure approval of the application for admission before sending patient to the hospital. Failure to observe this rule will necessitate return of the patient, unless the condition is critical.

(9) Patients must be accompanied by sufficient funds to enable them to reach the hospital and to provide for their return home.

(10) Patients shall be dismissed whenever in the judgment of the attending hospital physician it is not essential to their welfare that they remain in the hospital.

(11) In the event of the death of a patient and in case the diagnosis is not positive, the hospital authorities are empowered to order such post-mortem examination as may be necessary to determine the cause of death for death certificate purposes.

GROUNDS AND BUILDINGS

The grounds and buildings of the Medical College and Hospital have been excellently planned by Dr. Irving S. Cutter, former Dean, and John Latenser and Sons, architects of Omaha. The entrance to the grounds is one of the beauty spots of Omaha, and the buildings present an impressive harmony of arrangement and architecture. The buildings now on the Medical College campus are the North and South Laboratory buildings, the two units of the University Hospital, the Nurses' Home, a Nurses' Dormitory, the power plant, greenhouse and carpenter shop. Future expansion of the hospital is planned in serial unit additions westward with added nurses' homes along the south side and laboratory buildings along the north side, a recreational park for ambulant patients and an athletic field for students west of the hospital.

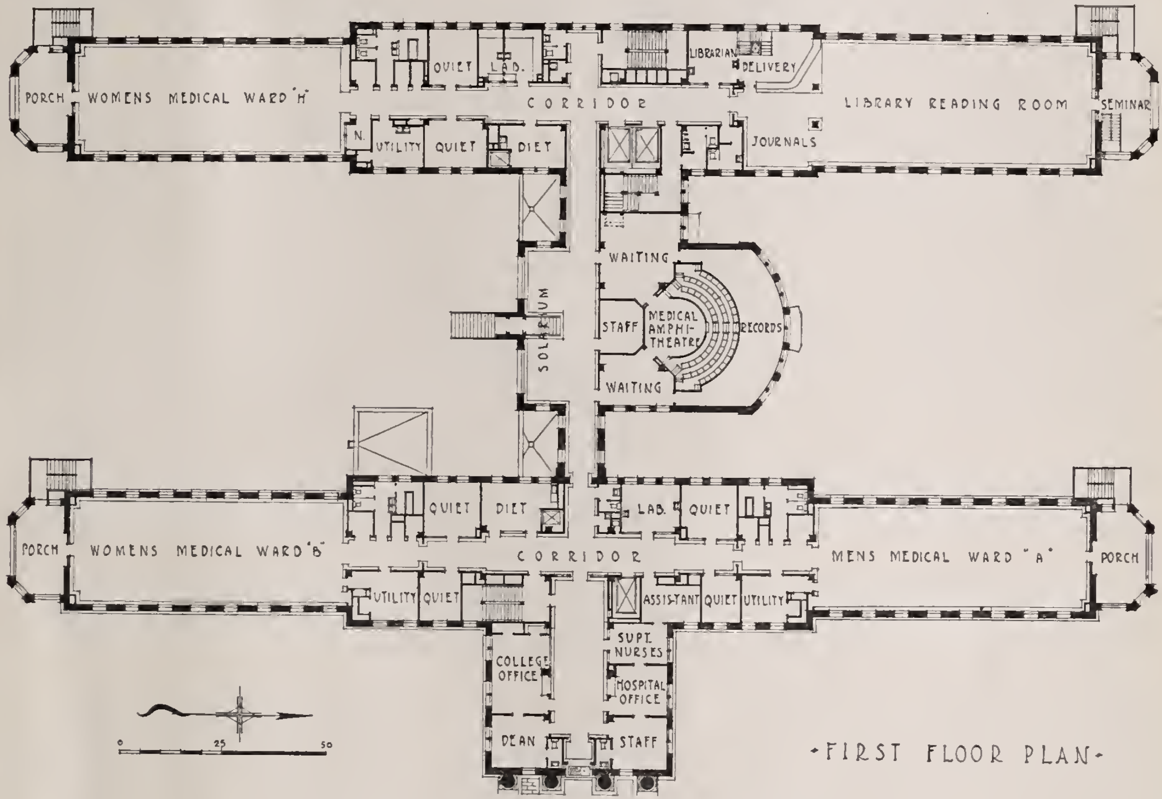

Fig. 3. University Hospital—First Floor Plan.

The University also owns a considerable amount of land bordering the Medical College Campus, this being planned for adjoining private hospitals which will be affiliated with the University Hospital. The Clarkson Memorial Hospital is planning to build across the street at Forty-second and Dewey Avenue; the Child Saving Institute is located at Forty-second and Emilie Streets and a new children's hospital is being considered at Forty-fourth and Dewey Avenue overlooking the recreational park. The Douglass County Hospital is but seven blocks to the south on Forty-second Street, easily accessible from the Medical College Campus. Recent action by the Board of County Commissioners has begun the separation of the County Hospital and the County Poor Farm, and plans are drawn for the development of a modern County Hospital at its present site. The centering of many medical activities about the State Medical College is a logical procedure, and future growth is more likely to be underestimated than overestimated.

The University Hospital, with the second unit completed this year, has a capacity of 250 beds, arranged on a sixteen bed ward plan in north and south wings, with central service and quiet rooms and a connecting corridor on all floors between units. The ground floor contains the admitting department, kitchen, dining rooms, clinical pathology laboratories, necropsy amphitheater, purchasing and supply department, store rooms, library stack room, linen and sewing rooms and the department of roentgenology and physical therapy. The first or main floor contains the College and Hospital offices, three medical wards with adjoining isolation rooms, diet kitchens, laboratories, work rooms, etc., the library reading room, the medical amphitheater and the hospital record room. Each floor has, on the connecting corridor between units, a spacious solarium, with south exposure, and each ward a sun porch. The second floor contains the resident physicians' quarters, four surgical wards and a photographic room The third floor contains the internes' quarters, two wards for obstetrics and gynecology, a children's ward and a psychopathic ward. On the fourth floor are situated the surgical amphitheater and operating rooms, a children's orthopedic ward and a psychopathic ward.

There are several special features worth noting. The admitting department at the ground floor entrance consists of a waiting room, admitting office and completely equipped examining room with the admitting physician in charge. All patients must enter the hospital through this department, and are referred to the proper service with a brief case record and diagnosis. Accident cases and minor surgery are cared for in this department, and the hospital follow up clinics and records maintained. The clinical pathology department is ideally situated in the north wing of the first hospital unit, adjacent to the necropsy amphitheatre. The purchasing and supply department on the ground floor is ideally located in central space with an extensive storage basement under the second unit. All purchases are made by competitive bids and a perpetual inventory maintained of all supplies received. The department of roentgenology and physical therapy occupies the south wing of the second unit of the hospital and is fully equipped to do all work in this field. The medical library occupies the first and ground floors in the north wing of the new hospital unit, consisting of a reading room, seating 125 students, and a stack room with space for eighty thousand volumes. The library now has forty thousand volumes and is one of the best in the country. A subscription list of 256 journals is maintained. Two children's wards in the south wing of the new unit, third and fourth floors, are specially divided for isolation of infants and infectious cases. The two psychopathic wards in the north wing of the new unit, third and fourth floors, are divided into nine single rooms, five of which are sound insulated, and two three-bed wards for observation and recovery. An occupational therapy room and hydrotherapy facilities are provided. This limited provision of the University Hospital for the care of curable psychopathic patients partially meets a great state need. The State Hospital for the Insane at Lincoln is overcrowded and many curable patients do not need to be committed to this institution. Colorado, Iowa, and other states, have established such psychopathic hospitals in connection with their State Medical Colleges and when the value of these two wards of the University Hospital is demonstrated, Nebraska also probably will make such provision. The outpatient department is intimately connected with the hospital, located in the first two floors of the South Laboratory Building on the Medical College Campus. 35,000 visits were made by 5,533 dispensary patients last year. This furnishes an excellent teaching clinic for senior medical students, and permits selection of instructive cases for hospital admission.

INTERNSHIP

The internship in the University Hospital is a rotating eighteen months service, a new intern beginning duty every two months throughout the year. The services advance as follows: (1) *Pathology*—two months, responsible for all special laboratory tests, surgical tissue examination, dressing of infected wounds, and assistant at necropsies; (2) *Drug Room and Anesthetics*—two months, maintenance of drug stock, for hospital orders and over one thousand prescriptions per month for outpatients department, is first assistant on anesthetics; (3) *Roentgenology and Physical Therapy*—two months, full time work in this department, and responsible for emergency work outside of regular hours; (4-5) *Medicine*—four months, including neurology and dermatology; (6-7) *Surgery*—four months, including orthopedic surgery, urology, fractures, neurosurgery; (8) *Pediatrics*—two months, including oto-rhino-laryngology and ophthalmology, assistant pediatrician to Child Saving Institute; (9) *House Physician*—two months, obstetrics and gynecology, admitting physician in the receiving department. This internship is not excelled anywhere in the country in the general training given and opportunities offered by a service in a teaching hospital.

ADMISSION OF PATIENTS

Patients are admitted to the University Hospital from all counties of the state on the basis of county population quota insofar as is possible. This does not mean that any county can force the admission of incurable or institutional cases into the hospital because its county quota has not been used. Such patients are ineligible and have to be sent home at considerable unnecessary expense if they are admitted. The University Hospital must serve first the purpose for which it was established and is maintained,—that of medical teaching, and patients, who remain a long time and cannot be benefited or required only bed care, not only are of no value for teaching but fill beds which might be used by patients who could be benefited. Certain hospital services, as the acute illnesses, infectious diseases, obstetrics, accidents, and minor surgery, all extremely valuable and necessary in medical teaching, can be maintained only by admitting patients from nearby counties in excess of their quotas. The reason the College of Medicine was located in Omaha was to provide such clinical facilities for teaching, and fully justifies a disproportionate service to Douglas County patients. However, a stricter requirement is maintained that Douglas County patients pay the cost of board and nursing while in the hospital. Exceptions to this rule are made only when it is desired to admit an instructive teaching case or when the University Hospital is able to render a hospital service badly needed and not available elsewhere. The hospital is very desirous of rendering service to outstate counties and patients will be admitted promptly without question unless they are quite evident senile institutional patients. The hospital is glad to admit even those if there is any question concerning diagnosis or treatment which a thorough study might clear up.

With the second unit in operation, there should be no cause for delay on account of lack of beds, which has been a handicap during the past few years. It is not necessary to send patients to the hospital without notice in order to get them admitted, if they are eligible. It is hoped that outstate physicians and county officials will appreciate the problems of maintenance of a teaching hospital, and will recommend only those patients who can be benefited, or patients who present a problem in diagnosis and treatment. The University Hospital cannot relieve the counties of the care of their aged and infirm who require institutional care rather than hospital care.

The cost of maintaining patients in the University Hospital is between three and four dollars per day, depending upon the separation of medical college expense from hospital maintenance. Patients who receive this excellent service of the University Hospital, which includes detailed case study superior to most private hospitals, with consultation and treatment by the foremost physicians of Omaha, are expected to pay at least the cost of board and nursing which is three dollars per day. This applies to all patients who are not established county charges. Patients should not be told that any rate less than three dollars per day will be charged, but, if honestly unable to pay this much with time allowance, should be told that the hospital authorities will adjust this fairly with them. Pauperism is encouraged by the idea of free care, and the patient's morale is improved by his recognition of an obligation and a service at least partially paid for.

SIR JOSEPH LISTER AND MODERN SURGERY*

1827--1927

H. WINNETT ORR, M. D.,
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In 1927, we have the one hundredth anniversary of the birth of Sir Joseph Lister. Lister was a surgeon and teacher in three great British Universities, Glasgow, Edinburgh and Kings College, London. To him we are indebted in great measure for the entire modern system of clean or aseptic surgery. Lister was the first to work out the surgical method now in common use under the title of the "antiseptic system". In his honor aseptic (no infection) and antiseptic (anti-infections) surgical technique have commonly been referred to as Listerism.

Listerism, with a few improvements, has conferred enormous benefits upon all those who have suffered injuries or diseases requiring surgical treatment. It is almost impossible for us at the present time to realize how great a difference there is between the hospital conditions and the hospital methods of today and those of fifty years ago.

About 1860, Lister was engaged upon a study of the causes of infection and inflammation in wounds: he referred to the condition as "putrefaction" in wounds because in practically all cases of infected wounds there were disagreeable decomposition and unpleasant odors as well as other dangerous features. Operations in all cases at that time carried with them not only the danger of the operation itself, but the danger of secondary infection, putrefaction, hemorrhage, gangrene, erysipelas, hospital fever, etc. The causes of these conditions were not understood. Lister, himself, in the early years of his practice, treated such conditions on the theory that they were caused by the entrance of air or oxygen, into the wounds. Pasteur, the great French chemist, was the first to show the relationship between definite living organisms and certain kinds of fermentation, putrefaction and infection. In referring to this, Lister said: "In the course of an extended investigation into the nature of inflammation, and the healthy and morbid conditions of the blood in relation to it, I arrived several years ago, at the conclusion that the essential cause of suppuration in wounds is decomposition brought about by the influence of the atmosphere upon blood or serum retained within them, and in the case of contused wounds, upon portions of tissue destroyed by the violence of the injury.

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*Read before the annual meeting of the Staff of the Lincoln General Hospital.

To prevent the occurrence of suppuration, with all its attendant risks, was an object manifestly desirable; but till lately apparently unattainable, since it seemed hopeless to attempt to exclude oxygen, which was universally regarded as the agent by which putrefaction was effected. But when it had been shown by the researches of Pasteur that the septic property of the atmosphere depended not on the oxygen or any gaseous constituent, but on minute organisms suspended in it, which owed their energy to their vitality, it occurred to me that decomposition in the injured part might be avoided without excluding the air, by applying as a dressing some material capable of destroying the life of the floating particles." (*Lister-British Medical Journal,* 1867, vol. ii, p. 246. *Collected Papers,* vol. ii, p 37).

Lister seized upon the work of Pasteur as the solution of the phenomena which he had been trying to explain.

Lister had already made some observations upon the influence of carbolic acid in the prevention of putrefaction; he immediately set about to determine in what cases carbolic acid might be used in connection with the prevention and control of infection in wounds. He soon found that by using carbolic acid to clean up the hands, instruments and other materials employed in operations, and by using carbolic acid preparations of various kinds to exclude infection from the wounds during and following operation, many of these so-called hospital diseases due to infection, could be prevented. The working out of this so-called antiseptic system covered a period of twenty years and involved the overcoming of many serious difficulties. In the end, however, Listerism was gloriously triumphant and is, in slightly modified form, the method of today.

Godlee, in his Life of Lord Lister, gives the following points as those of most importance which came to Lister out of the work of Pasteur and which contributed so much to the development of the Lister method.

"Putrefaction is a species of fermentation.

"It is caused by the growth of micro-organisms and does not occur independently of their presence.

"The micro-organisms that produce fermentation and putrefaction are carried by the air on the dust that floats in it. They also occur on and in solid and liquid substances.

"These micro-organisms can be destroyed by heat and other agencies or separated from the air by filtration.

"Certain recognizable organisms produce definite and distinct fermentative processes.

"All of these organisms require oxygen. Some of them flourish only in the presence of free oxygen (aerobic), others only in the absence (anaerobic). The latter acquire their oxygen from the bodies which, by their growth, they are causing to ferment and putrefy.

"Many natural animal and vegetable products have no tendency to ferment and putrefy, even in the presence of oxygen, if collected with proper precautions and kept in sterilized vessels.

"Spontaneous generation has never been observed to occur and thus may be regarded as a chimera."

The terrible effects of wound infection before the introduction of Listerism or the antiseptic method were an individual matter with every patient. Inflammation of every surgical wound and, in fact, of every accidental wound was expected. It was simply a question as to what form the infection would take and how severe it would be. Tetanus, erysipelas, gangrene, always threatened, and even following trivial injuries and operations they were likely to prove fatal. "After suppuration was well established, under favorable circumstances the fever abated, the wound became less painful and less red, and, as the granulations filled up from the bottom, suppuration gradually diminished and finally stopped. The process of healing occupied weeks and months and left a scar that was sometimes wide and puckered. Surgeons were quite satisfied with such a result, and were full of self-congratulation if anything better was achieved."

Unfortunately these infections might occur not only at the time of the operation or the injury but they might be acquired like diphtheria or scarlet fever, in the hospital wards. They were known as hospital diseases, and there was no known method of sanitation or disinfection for their control. In a few instances hospitals were burned or torn down because these infections became so severe. This condition is well described by a British surgeon in an article published in 1874 before the Lister method had begun to exert an influence upon the conduct of surgical departments in hospitals.

"I am acquainted with other instances of hospital infection, nearly, if not quite, as serious as this; but as they have not yet been brought before the public, I refrain from mentioning them. But surely no stronger or more conclusive evidence is needed of the tenacious and ineradicable nature of this pyaemic infection, when once it has taken firm hold of a hospital, than that which is furnished by the examples just given. What name so appropriate as 'hospitalism' for a condition of things such as here described? The town free from infection; the hospital saturated with it, to such an extent as to induce its own surgeons to recommend their own patients not to enter it, to compel them to refrain from operating, and after every attempt that science and humanity could suggest—every hygienic means employed in vain in the fruitless attempt to eradicate the pestilence from 'the very fabric itself'—to cause the governors, as a last resource, to decide on the demolition of the building and its complete reconstruction, at a great expense, as the only remedy. The truth is that, when once a hospital has become incurably pyaemia-stricken, it is impossible to disinfect it by any known hygienic means, as it would be to 'disinfect' a crumbling wall of the ants that have taken possession of it, or an old cheese of the maggots which have generated in it. There is, in these extreme cases, only one remedy left—that remedy which the Governors and Staff of the Lincoln County Hospital have so generously, so disinterestedly, so nobly, resolved on—viz: the demolition of the infected fabric, and we must add, the destruction of its materials, for that last clause must not be forgotten. In fact, just as the cattle plague has to be 'stamped out' by the pole-axe, so has the infection of a pyaemic hospital to be destroyed by the pick". (Ericksen-London Lancet, 1874, 1, p. 338).

Lister's first case to be done by the antiseptic method in which he opened the skin for the drainage of an abscess and obtained healing without a complicating or mixed infection, was of particular interest. It is striking even at the present time because of the fact that the important lesson which it teaches is still unlearned as far as a great part of the medical profession is concerned. In Lister's case, after a careful preparation of the skin over a large psoas abscess, he evacuated a considerable amount of tuberculous pus and then covered the opening immediately with a twenty-five per cent carbolic acid pad. At the time of the operation and subsequently, the wound was protected against the invasion of any complicating micro-organisms. In other words, Lister successfully prevented (by following the theoretical methods at which he had already arrived) a mixed infection of a tuberculous abscess, the patient healing primarily and making a recovery.

Even in our day it is common to see such an abscess incised under less than perfect surgical conditions, and to see the area squeezed and dressed secondarily in such a way as to give the patient a mixed infection. This is often a serious or even fatal complication.

This is only one of the ways in which Lister's teachings have been misunderstood or misapplied. It is of the greatest importance even now to study most carefully the fundamental principles involved in the Lister method. As it is sometimes expressed, it is important for the surgeon to develop an "aseptic conscience". One of the important things for us to bear in mind is that Lister himself had no conception of what we now speak of as hematogenous infection. He did not realize that infection might be carried from one portion of the body to another in the blood stream and establish apparently primary infection under unbroken skin or set up secondary infection at another point. Neither did Lister properly appreciate the body defenses against infection; he felt that our battle with infectious micro-organism must be made entirely on the outside. That impression unfortunately is one which has been largely prevalent in the medical profession ever since that time. The attempt to control infection entirely by means of chemicals on the outside of the body has not been a success. The Listerian principle as applied to the prevention of infection by the use of antiseptics to exclude organisms was the most important fact for which we are indebted to Lister.

The epoch-making paper, which recorded Lister's first observations on the antiseptic system of surgery, appeared in the Lancet between March and July, 1867. It bore the title "On a New Method of Treating Compound Fractures, Etc., With Observations on the Conditions of Suppuration". His scrupulous attention to phraseology is shown by the fact that he was in great doubt whether to use the word "conditions" or "causes", and discussed the matter with his father at some length.

In promulgating his antiseptic system, Lister was greatly handicapped by the fact that the establishment of his technique as a clinical method depended so largely upon the clinical results; that is to say, one must see the patients and must be familiar with results in order to know that one method is better than another. As the results accumulated indicating the difference in the condition of patients and the kind of results obtained before Listerism and afterwards, the recognition of Lister's achievment became greater and greater. For a long time, however, it seemed that Lister's attitude was wholly one of criticism of his professional associates and their methods. This, of course, made the establishment of his new method a matter of great difficuly.

Even the hospitals began to take on an entirely different appearance; one finds this frequently referred to and Lister himself began to speak of it in his papers. He said:

"There is, however, one point more that one cannot but advert to—namely, the influence of this mode of treatment upon the general healthiness of a hospital. Previous to its introduction, the two large wards in which most of my cases of accident or operation are treated, were amongst the unhealthiest in the whole surgical division of the Glasgow Royal Infirmary, in consequence, apparently, of those wards being unfavorably placed with reference to the supply of fresh air; and I have often felt ashamed, when recording the results of my practice, to have so often to allude to hospital gangrene or pyaemia. It was interesting, though melancholy, to observe that, whenever all, or nearly all, the beds contained patients with open sores, these grievous complications were pretty sure to show themselves; so that I came to welcome simple fractures, though in themselves of so little interest either for myself or for the students, because their presence diminished the proportion of open sores among the patients. But since the antiseptic method has been brought into full operation, the wounds and abscesses no longer poison the atmosphere with putrid exhalations, my wards, though in other respects under precisely the same circumstances as before, have completely changed their character; so that during the last nine months not a single case of pyaemia, hospital gangrene, or erysipelas has occurred in them.

"As there appears to be no doubt regarding the cause of this change, the importance of the fact can hardly be exaggerated."

Many antiseptic substances were brought to Lister's notice and were subjected by him to the most stringent tests, both as regards antisepsis and also as regards the irritation of wound surface and skin. At this time bacteriology was practically non-existent, and scientific tests could not be made with the same precision as at the present day, but Lister subjected them to severe practical tests. He said: "I want to know whether these chemical substances will irritate the skin or the wound, how they will behave in serum and blood, which are my cultivating media (not in Pasteur's solution, or other artificial media), whether the gauze can store enough antiseptic to prevent growth of bacteria in the blood and serum which pass through it, and so on".

At the time when Sir James Simpson challenged the originality of Lister's work on account of the prior use of carbolic acid in France, Lister had never read any of the accounts of this previous work. He hastened to look up the matter and had no difficulty in pointing out not only the independent character of own researches, but the entirely original basis upon which his work rested, his new clinical method and his uniformly better clinical results.

"In arguing in favour of the meticulous care that Lister took to avoid sepsis, and of the theoretical basis of the treatment on which Lister's methods were founded, one used often to be met with the statement that healing without suppuration or septic disease was no new thing, and that, therefore, Lister's views could not be accurate. Some asserted that any increased success which Lister obtained was essentially the result of increased simple cleanliness (apart from disinfection) that Lister's method entailed, and as time went on those surgeons who were particularly careful as to cleanliness were able to bring forward very striking results in favour of this view. And there is no doubt that there is much truth at the bottom of this contention. For even simple cleanliness (and by that I mean washing with soap and water) means a very great advance over the state of matters which prevailed before the Listerian period. In the pre-Listerian days I have no doubt that many of the bad results, such as hospital gangrene, erysipelas, etc., were due, to a very great extent, to want of cleanliness. In those days the surgeon kept an old frock coat hanging up outside the door of the operating theatre, which he put on on his arrival at the hospital; it was covered with dried blood and dust and dirt, and the bloodier it was, the prouder was the surgeon. He turned up the sleeves and the coat collar, and was ready to operate. The instruments were laid out upon the table, no doubt they were washed before they were put away, but there was no special preparation of them before being used again. I have seen a surgeon very proud of a pocket bistoury which had belonged to a great surgeon before him, put his hand in his waistcoat pocket, take out the knife, open it, and perform the operation. At the end it would be wiped with a damp and then with a dry towel, shut up, and placed in his pocket ready for the next operation. And in the ward those attending to the wounds went from one case to another with the same instruments, and unwashed hands, spreading infection as they went. Those who held that Lister's work was merely the result of simple cleanliness, were particularly careful in all these matters and consequently had greatly improved results."*

After Lister's earlier years (until 1860) in Edinburgh, he became the third occupant of the chair of Surgery in Glasgow. Here he remained for nine years. During the latter part of the time he was constantly experimenting and developing his theories and clinical methods in the treatment of wounds. In Edinburgh he was surrounded by enthusiastic assistants and students and his clinics were attended by distinguished visitors from the continent and from America. The visits to the wards as the antiseptic method developed became more and more interesting. Lister, himself, did or supervised the wound dressings. He would take off a dressing, smell it, and pass the dressing to professional visitors to smell, calling attention to the fact that it was free from putrefaction and disagreeable odor.

Opposition, however, was not lacking. Other technical and clinical methods were held to be as good as those proposed by Lister. He was vigorously criticized for performing operations (a knee joint operation, for example) always considered unsafe before the advent of the antiseptic method. Sir James Simpson and others were at great pains to impede the progress of the antiseptic method and with some notions of their own to advance.

When the call came in 1877 offering Lister the Professorship of Surgery in Kings College, London, he felt it to be not only a recognition of his method but an opportunity to teach from the very center of medical education in Great Britain.

All of Lister's biographers speak of the unfortunate effect of Lister's opening lecture at Kings College. At this lecture were, of course, all of the students and not only all of the members of the faculty, but members of other London faculties as well. Lister had recently been seriously engaged upon an investigation to demonstrate the specific character of certain fermenting organisms. He was greatly concerned about this especially as regards a determination of the exact cause of inflammation and infection in wounds. For his research at the time he had been occupied with a study of the behavior of the lactic acid bacillus in milk. Accordingly he gave more than two hours of his first lecture in London to a demonstration with flasks, test tubes, cultures, etc. of the behavior of the lactic acid bacilli. Unfortunately, this was not what his audience wanted to hear; they were manifestly disappointed, the students became restless, and on the whole, the lecture made an unfortunate impression. Just how much this had to do with Lister's subsequent difficulties at Kings College and in the hospital, cannot be decided. Certainly, however, his subsequent experience there was a great trial to him and a great disappointment to his friends. His classes were small, his beds were empty and visitors to his clinics were few. Consequently, the progress of the development of the antiseptic system in London and even in Great Britain was exceedingly slow.

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*W. Watson Cheyne—Lister and His Achievement. Pp. 100-101.

Fairly early in Lister's work at Edinburgh he had abandoned to some extent the method of using a carbolic acid paste in covering up an infected wound or wounds likely to become infected. As a substitute be began the use of the carbolic spray, so called, and the application of absorbent dressings, that is to say, cotton and gauze dressings, sterilized either by being wrung out of a carbolic acid solution or being impregnated with some other supposedly antiseptic material. The saturation of the air surrounding the patient with a spray containing carbolic acid rendered the technique of Lister's method extremely difficult. It was very hard on the assistants to whom dressings were entrusted and it was a serious complication of the conduct of the operating room when the spray was used at the time of operation. Hand sprays, and later more complicated machines, were used in order to keep the infected atmosphere free from germs by means of the carbolic spray. Later, this was done by means of steam, but the time came, of course, when it had to be abandoned. Quoting from Godlee on Lord Lister (pp. 291-292): "In 1887 Lister finally abandoned the spray. His last word on lowering this standard, round which so many battles had been fought, has almost a touch of sadness, because he had to own that, after all, all the tumult of the captains and the shouting, all the misgivings and doubts that it had caused—the spray did not do and never could have done, what he had claimed for it." "As regards the spray," he said at the International Medical Congress in Berlin in 1890, "I feel ashamed that I should ever have recommended it for the purpose of destroying the microbes in the air. If we watch the formation of the spray and observe how its narrow initial cone expands as it advances, with fresh portions of air continually drawn into its vortex, we see that many of the microbes in it, having only just come under its influence, cannot possibly have been deprived of their vitality. Yet, there was a time when I assumed that such was the case, and trusting the spray implicitly as an atmosphere free from living organisms, omitted various precautions which I had previously supposed to be essential."

Out of the antiseptic method Lister finally arrived at the performance of an aseptic surgical procedure as we now understand it. This he describes in his account of the following case (p. 467): "Four days ago I removed a lobulated subcutaneous fatty tumor from the shoulder of a woman aged 64, the tumor measuring about two inches by one and one-half inches, and I did it so as to insure, as I hoped, aseptic purity without contact of any antiseptic material with the wound. For this purpose the sponges, purified as usual by being in 1 to 20 solution, had the carbolic acid removed by washing in water that had been boiled, and other things were similarly treated. At 10 a. m., a kettle having been brought fully to the boil in the kitchen, was taken upstairs and left to cool. The patient's shoulder having been washed with 1 to 20 carbolic acid solution, and my hands and those of John Godlee having been purified with the same, our coats being off, we dipped our hands in boiled water and then proceeded to operate with the clean but not antiseptic instruments and sponge. Chloroform was not given. A single incision in the course of the line from the nape of the neck to the shoulder, exposed the growth, which being non-adherent, was squeezed out of its bed without difficulty; a single vessel was twisted, the edges of the wound were brought together by three stitches of the antiseptic silk at intervals of about 3-4 inch, the edges lying nicely in apposition though the wound was not occluded."

For fifteen years Lister occupied the chair of Clinical Surgery at Kings College. He succeeded Syme as Surgeon-in-ordinary to the Queen of Scotland in 1870 and in 1878 in London he succeeded Mr. John Hilton to the same position in England. In 1883 he was made a baronet, the second surgeon at that time, to be given this honor; several others, however, were appointed the following year. After all his difficulties at Kings College and in the hospital, real recognition had now come to him; his method had been accepted and his position both in the profession and in London was assured. From Lister's earliest experiments he had had the greatest confidence in the future of his method and his confidence was now being fully justified in the gradual diffusion of Listerism throughout the world. Time had strengthened his position and the usefulness of his method. The establishment of the Lister Institute in London, for administering the Pasteur treatment for rabies, was one of the many ways in which Lister's contribution to surgery was recognized. It is interesting to observe that of the fund for the Lister Institute in London, 8,000 pounds was voted by the French Parliament. Later this courtesy was returned by the sending of 2,000 pounds to the Pasteur Institute in Paris.

Lady Lister, who had been throughout Lister's entire career of the greatest help to him, not only personally but professionally, died in 1893 during a visit with Lord Lister to Italy.

At the time of the election of Pasteur to the French Academy, Lister was present and was greeted by Pasteur following Pasteur's address. Pasteur might have been speaking for Lister as much as for himself in the following paragraph:

> "The representatives of the Faculty of Lille remind me of my early studies in crystallography and fermentation which have revealed to me a completely new world. How great was the hope which inspired me that there are laws governing these obscure phenomena! You, my dear colleagues, have been witnesses to the series of deductions by means of which, as a disciple of the experimental method, I have been favoured to advance the study of physiology. If at times I have disturbed the calm of our Academies by rather lively discussions, it has been because I was passionately defending the truth.
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> You, lastly, delegates from other nations, who are come from so far to give a proof of sympathy with France, you bring me the deepest joy which a man can feel who believes invincibly that science and peace will triumph over ignorance and war, that men will unite not to destroy, but to build up, and that the future will belong to those who have done most for suffering humanity. And here I appeal to you, my dear Lister, and to you all illustrious representatives of Science, of Medicine and Surgery.
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> "Young men, young men, put your trust in those sound and availing methods of which we still know only the first secrets. And all of you, whatever calling you may follow, do not let yourselves be touched by disparaging and barren scepticism, be not discouraged by the sorrows of certain hours that pass over nations. Live in the serene peace of your laboratories and your libraries. Say to begin with, 'What have I done for my own improvement?' Then, as you go further, 'What have I done for my country?'—up to that moment when you shall have, it may be, the immense happiness of feeling that you have contributed something to the progress and the good of humanity. But, whatever favours life may give, or refuse, to a man's work—he ought, as he draws near to the end of it all, to have the right to say, 'I have done what I could.'

Following Lister's retirement from Kings College and the death of Lady Lister, Lister took a less and less active part in public affairs. In 1896, however, he was President of the British Association which met at Liverpool and gave an important address on the "Interdependence of Science and the Healing Art". He concluded his address as, in a way, he concluded his work, with the following remarks: "Pasteur's labours on fermentation have had a very important influence upon surgery. I have been often asked to speak on my share in this matter before a public audience; but I have hitherto refused to do so, partly because the details are so entirely technical, but chiefly because I have felt an invincible repugnance to what might seem to savour of self-advertisement. The latter objection now no longer exists, since advancing years have indicated that it is right for me to leave to younger men the practice of my dearly loved profession. And it will perhaps be expected that, if I can make myself intelligible, I should say something upon the subject on the present occasion". He went on to show how Pasteur's purely scientific observations had led to his own practical application of them. He explained his early complicated methods and how it had come about that new scientific discoveries had led to their great simplification. And then, after telling what had been done in the way of saving life, banishing septic diseases and advancing surgery, he continued: "It pleases me to think that there is an ever-increasing number of practitioners throughout the world to whom this will not appear the language of exaggeration. There are cases in which, from the situation of the part concerned or other unusual circumstances, it is impossible to carry out the antiseptic system completely. These, however, are quite exceptional; and even in them much has been done to mitigate the evil which cannot be altogether avoided.

"I ask your indulgence if I have seemed to dwell too long upon matters in which I have been personally concerned. I now gladly return to the labours of others". (Godlee's Life of Lord Lister.).

ULTRAVIOLET RADIATION FROM SUNLIGHT AND INCANDESCENT LAMPS

According to Herman N. Bundesen, Harvey B. Lemon, I. S. Falk and E. N. Coade, Chicago (*Journal A. M. A.*, July 16, 1927), comparatively little ultraviolet radiation of known physiologic significance appears in the sun's spectrum during the winter months in Chicago. The ultraviolet rays are absorbed to a significant degree by smoke in the atmosphere. Incandescent lamps (of 300 watts) emit radiations in the ultraviolet region which are of physiologic interest. Transmission spectrums for window glass and certain window glass substitutes confirm the reports of other investigators and of the Council on Physical Therapy on relative permeabilities to the ultraviolet radiations.

DIABETES IN CHILDREN*

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It is not my purpose to try to give detailed information; nor do I wish to take up much time in general discussion. I wish rather, to review from recent literature and case records some of the outstanding facts and theories and particularly to point out differences in this disease as it manifests itself in children.

Joslin says: "Formerly the old diabetic patient was long lived and the young diabetic patient was short lived, but now in conformity with natural laws the reverse is taking place".

Miss Angeline D. Hamblen, in a paper on deaths from diabetes in Massachusetts, states that while the percentage of total deaths from diabetes above the age of 50 is on the increase, the deaths below the age of 20 have decreased more and more rapidly.

Insulin, of course, has entirely changed the picture of this disease. This is particularly true of diabetes in children. Whereas in former years a diagnosis of diabetes mellitus in a child below the age of puberty meant death in an average of 1.6 years, it is now possible to direct the parents' attention to a paragraph in a recent diabetic manual which is headed: "The Advantages of Diabetes Over Other Chronic Diseases'', and in this paragraph we read the author's statement that many of his patients have actually lived longer than would have been expected of them had they been normal healthy people, and far longer than their similar fat friends whose obesity led to their death by way of the heart or kidney. Insulin may make it possible for the diabetic child to grow to adulthood, and to live the full expectation of life. Insulin has helped patients to regain their tolerance for carbohydrates. Especially do we find this to be the case in children. It is quite the usual thing to expect an increase in tolerance in a child under adequate insulin dosage; and a rapidly increasing number of patients have been able to discontinue their insulin entirely and to come back to a normal diet. This would make it appear that insulin should be considered a cure for diabetes.

While insulin promises much to the diabetic, its use in children must be more carefully guarded than in adults, because of the unstable metabolic equilibrium and consequent rapid reactions. I have repeatedly seen insulin reactions in one child when his insulin dosage was increased only one unit, while his diet prescription remained unchanged. This same child also had reactions when his meal was delayed for more than 15 minutes after the injection of his insulin. On the other hand I knew an adult who juggled his daily insulin dose as much as 25 units without any apparent effect.

This brings me to another point. While it may be permissible or even desirable under some circumstances, to let an adult go on for long periods of time showing slight traces of sugar, I believe it is decidedly dangerous to do so with children. The spilling of sugar means a strain on the pancreas and damage to that organ. The greater the damage done the less the possibility of regeneration. Therefore, the pancreas should be protected from strain, especially in young individuals in whom the possibility of regeneration is the greater.

Then, too, the transition from the mild to the severe type of the diease usually occurs much more rapidly in children.

I feel that the patients should be taught that the urine must be kept absolutely sugar free; that even a faint trace is dangerous. My own experience with patients and parents of patients makes me feel this very strongly.

Mary A., my first juvenile diabetic to be treated with insulin, came to the hospital in 1923, age 13 years, weighing 43 pounds and thought to be dying. She now weighs 114 pounds, is apparently normal and the most consistently regular patient I know. Her insulin dosage has not been changed except for short intervals for four years, but she has been able to take a diet which comes nearer being normal. She keeps sugar free.

Arnold K. has been in the hospital 5 times to my knowledge. Two times in the University Hospital, Omaha, and three times in a private hospital under my care. Each time he was brought in in coma and when he regained consciousness readily admitted that he had not kept to his diet and had paid no attention to small amounts of sugar in his urine. The first time I saw him he left the hospital on a maintenance diet, gaining weight and sugar free without insulin, but each time that he returned it was necessary to send him home under increased insulin dosage.

Alice M. and Elmer S. were both mild diabetics but I could not impress their parents with the necessity of keeping them sugar free. In each instance the mothers felt so sorry for them that they repeatedly allowed them to eat things which had been forbidden. Alice lived only seven months and Elmer less than 6 months from the time that diabetes was first diagnosed.

Of my other juvenile diabetics I would say that their progress has been dependent upon the way in which they followed instructions.

Although it has not been proven that infections cause diabetes, there is I believe, much evidence in support of the theory that the pancreas may be damaged by toxins from focal infections.

Children are peculiarly susceptible to many infections, and in obtaining a history in a case of diabetes it is very common for parents to date its beginning back to the time when the child had some infectious disease. It is also quite common to find a transitory glycosuria during the course of an acute infection. What is the significance of this transitory glycosuria I do not know, but I am inclined to regard it as more or less serious, because twice quite recently I have found sugar under these circumstances in the specimens of children of diabetic parents.

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*Read before Lancaster County Medical Society, September, 1927.

It is common knowledge that infections make diabetes worse. That is, a mild diabetic may very quickly reach the coma stage if he is overtaken by an acute infection.

Mary T., age 7, doing well on a prescribed diet with a small daily dose of insulin was brought to the hospital in coma, twice within 4 months when she had attacks of acute tonsillitis.

Kermit L., aged 9, remained sugar free for almost 6 months after tonsillectomy, but later could not be kept sugar free with increasing doses of insulin until after his antra were opened and kept clear of pus. Then he did very well with decreasing doses of insulin.

Mary A., age 15, who for over 2 years had been taking 50 units of insulin daily to keep sugar free, found 70 units insufficient to ward off a severe acid intoxication just before drainage of a small ischio rectal abscess.

Linus H., age 9, and Virgil F., age 7, both had to have their insulin dosage doubled to be kept sugar free when they had common colds.

Although children are more susceptible to infections than are adults, they have the advantage over elderly diabetics in that they respond much more promptly to changes in diet and can consequently be made sugar free more easily without insulin unless their diabetes is more severe.

Solomon Strouse, writing in Abts' Pediatrics, says: "In children the incidence of disturbance of ductless glands, especially in relation to glycosuria, is infrequent". There are cases on record where glycosuria has been associated with symptoms of hypophyseal disturbances and with thyroid deficiency, but over against these is the well known fact that, as a rule, cretinism and other states of thyroid deficiency are associated with increased sugar tolerance rather than with glycosuria.

In a recent number of the Journal A. M. A., Priscilla White, M. D., of Boston, writes under the title, "The Potential Diabetic Child". She gives figures to show that whereas in the adult diabetic overweight is found in 80 per cent of cases, in children obesity is rare before diabetes breaks out, while overheight is more common in the diabetic child than is overweight in the adult.

In speculating on an explanation of over growth as a precursor of diabetes, Dr. White writes, "Functional strain on the pancreas in this type of child is not inconceivable". "With attainment of optimum growth the growth impulse is temporarily satisfied, but if the caloric intake remains high, an overstrain of the organs of metabolism including the pancreas may result, and diabetes ensues". Dr. White feels that the other glands of internal secretion may have an intimate casual relation to disorders in the secretion of the pancreas and consequently to diabetes.

Dr. Ralph Major has described a case of fatal diabetic coma in a child in which the autopsy revealed an unrecognized status lymphaticus, and Dr. Harvey Cushing has demonstrated the frequent association of hyperactivity of the pituitary gland and depressed function of internal secretion of the pancreas in a hundred of his acromegalic patients.

The relation between diabetes and disorders of the endocrine glands other than the pancreas is at least a probability.

Late complications of diabetes, that is, circulatory disturbances, high blood pressure, gangrene, carbuncle, etc., which are so common in adults are rarely if ever seen in children, and in them tuberculosis as a complication, need not be seriously considered.

TRAUMATIC NEURASTHENIA*

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In handling over 1500 injury cases during the past two years, the large majority of which have been compensation cases. I have catalogued the ones with whom I have had trouble in getting back to work, and find that a large per cent fall into a class who have been unduly kept from work by functional disorders rather than by organic disorders.

The above class, I believe, can truly be classified as traumatic, and still functional, and I shall endeavor to proceed, along with quotations from Dr. Moline of Denver, to describe a condition known as traumatic neurasthenia, as observed in compensation work.

From the start, and digging down to the very bottom of this subject, let us have a clear understanding of the word neurasthenia. It is derived from the Greek words for nerve, and for weakness. In short, then, a condition characterized by nerve weakness. At the present time it is used broadly by the profession to include nearly all nervous symptoms which cannot be attributed to organic lesions.

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*Read before the May, 1927, meeting of the Scottsbluff County Medical Society.

Narrowing ourselves to the subject of neurasthenia which may be caused by or which may develop subsequent to trauma, one of the most important predisposing factors is heredity, as revealed by a careful history of the ancestors who may have been suffering from a similar disease. People of excitable and emotional temperaments are much more susceptible than those of a more phlegmatic disposition. This condition is more often seen in people whose health has become debilitated by unhygienic living conditions.

Traumatic neurasthenia in itself is characterized by a generous loss of nerve force without any organic disturbance of the brain, cord, or peripheal nerves to account for such loss of power, and subsequent to some form of shock or trauma. The slightest accident (trauma) to any portion of the body is well enough in itself to produce a traumatic neurasthenia, but it is much more liable to be brought about when the impact is over one of the nerve centers.

It is generally recognized that a fall from some height, or a severe accident, may cause a person to become unconscious with subsequently a loss of nerve energy in the part of the anatomy being injured, but also the same party with much less injury might have many grave symptoms, were the force of trauma directed against the head. Within the boundaries of traumatic neurasthenia we have "Railroad Spine'' or a "Railroad Brain", depending more or less upon the site of the injury, and where and when received.

It is obvious that neurasthenia is a disorder of function and not an organic disorder, and that it presents the phenomena of both mental and physical makeups.

In my routine of practice in which there are a large number of accident and compensation cases, there are both the severe and mild cases. For this reason and to better bring out the different types I shall classify them as to the mild traumatic neurasthenias and the severe traumatic neurasthenias. Under this subject it is well for one to bear in mind that the morbidity of traumatic neurasthenia is primarily concerned with the functions of the higher centers and that the general organism in-so-far as it suffers at all, suffers in the main from perversion of the mind, which instead of controlling and adjusting the bodily economy permits a certain degree of independence to be exhibited by the various systems and functions. The trouble then lies within the injured mind, and in the body only through the influence of the disrumpled mind. If the mind be restored to its proper functioning capacity, then the symptoms of the body will rapidly disappear.

In typical cases all things which aid and abet to disorder the mind will greatly emphasize the symptoms, once an exciting factor has entered upon the scene. Even the progress of the patient can be greatly upset by bad advice and by un wholesome sympathy.

Injudicious suggestions from sympathizing friends, who may have, or who may not have at some time so suffered, results in some fearful complex for the affected. Thorough discussing of one's ailments with the neighbors bears heavily upon a lengthened period of convalescence, and oftentimes precipitates cases of hysterical paralysis, coinciding with the one that the next door neighbor woman might recall.

The patient soon becomes restless, loses sleep, and his appetite. A man who throughout life has been a hard worker, is by means of his timidity, unable to return to work, and thus thrown away from his daily habits, thereby limiting his physical exertion which only more intently exercises his pleasure of a round table discussion of his ailments. In so limiting his physical pleasures he becomes constipated, developes headaches, skin sensations, vaso-motor disturbances and chills, all of which are subjective, but when summed up add a new terror to his condition.

Severe traumatic neurasthenia. This type of case runs more to severe head injury types, more especially following glancing blows which cause long lacerations in the scalp with no material damage to the cranial vault. Immediately following the injury the patient may be unconscious or may be in shock for a short time, after which he recovers, apparently only to lapse in a complex of symptoms which are neurasthenic, and which are characterized by a look of distress, listlessness, glazy optics, wrinkled brow, and often times a concentrated gaze upon some object. Later he may complain of buzzing in the head, bad dreams, feeling worse when lying down, and impaired muscular movements. Mentally, a very cheerful person is readily transformed to the worse type, who will neither cooperate with his immediate environment nor with the doctor. These persons grow sallow, are constipated, lose their appetite and present themselves to the public as worn out, beaten down, individuals.

After careful examination for organic trouble, in most cases none can be substantiated. Along with the above complex we frequently find a rapid, irregular pulse fluctuating readily when one enters the room, the pupils are slightly dilated, the knee jerks increased and there may be a tremor of some of the fine muscles of the face. The patient soon becomes emaciated, generally weakened, and develops localized painful areas in the muscles of the extremities about the site of the injury. More often sensation disturbances are not apparent unless there is a strong trend of hysteria. If the hysteria element is superimposed upon the neurasthenia, the patient suffers from a vaso-motor collapse with subsequent flatulence, pounding heart, flushing and chilling.

More often the hysteria strain of the neurosis is found in people who normally carry an inferiority complex in their general makeup. This type is always aggravated by suggestions of the wrong kind, and by the improper method of handling immediately following the injury.

Traumatic hysteria presents itself to all of us in the types we observe and commonly term "spinal concussion", "railway spines", and "traumatic neuroses". Dercum states that "for a long time the profession was inclined to hedge with Oppenheim as to the purely hysterical character of the symptoms and such terms as traumatic neurasthenia and hybrid expressions as traumatic-hystero-neurasthenia came to be employed, but later finally definitely gave way without increasing knowledge of the name of traumatic hysteria.

In considering the neurastheniac who has precipitated his troubles after being directly injured, we must also take into consideration the type of person who is a true malingerer. Likewise the type who has been placed in between the two types. Namely, the person who may have had a slight injury without any organic damages, from medico-legal action. This type may gracefully assume symptoms which are almost bullet proof, and the day before the trial may have a relapse, which classifies them as a true traumatic neurasthenia. This can be greatly aggravated by a lawyer who persists in asking leading questions.

If a patient recovers immediately following the trial, whether he receives a verdict or not, then he is far from a traumatic neurastheniac but immediately classifies himself as a malingerer, and this type is an every day experience. These malingerers are always, or most always men without any particular residences. In my particular locality they are known as sugar tramps who annually migrate as do the wild fowl, and who are always on the lookout for an income without any physical exertion. Invariably they owe the landlady and the boarding house. At a trial the landlady and likewise the proprietor of the boarding house are always eager to testify in the plaintiff's behalf, of course, their motive being only to recover. In the ordinary events of a day's work they fall on a wet floor, ever so slightly. They will lay on the floor crying out in a wailing tone of voice and with their hands to their back. By this time a stretcher has arrived and they are removed to more comfortable quarters. Careful examination will reveal no external contusions, no disturbance of motor or sensory reactions and no variations in the reflexes. Stereographic x-ray examination of the back will either disclose no pathology, or it will bring to light an old injury upon which he has recovered damages at numerous other occasions. From their bed in the hospital one of their first requests is that they have some certain lawyer visit them, or they ask the doctor how much weekly compensation the state of Nebraska allows. As Dr. Moline says, "The subject is well posted in regard to his sufferings and they always subside, sooner or later, when the matter of the court and the compensation is finally adjusted. From another view-point a person really affected with a fracture or with a substantial injury which may incapacitate him will not present symptoms of a neurastheniac. Men really injured do not present a neurasthania complex because they know well that they have sufficient injury to entitle them to indemnity that they will receive. Lump sums have favorable influence in the treatment of neurasthenia and malingering cases. It is a wonderful therapeutic agent in cutting short his suffering, or his confinement to his bed, and often inspires in the brain of the plaintiff that a change of altitude is well for him. He invariably moves where he may try again. Malingering or the feeling of disability from injury or disease is a deception which may truthfully be said to be as old as the hills. It may indeed be traced to that primitive instinct which causes many animals to play possum.

Two types of malingerers are encountered. First, the type of fellow who maliciously invents his injury and forms a chain of symptoms about it, and second, the fellow who time and time again strives to recover damages upon an old healed deformity. The latter type is more prevalent among the typical floating population of laborers. Quite often these fellows are clever and unless they are very carefully handled from the very onset they get away with their demands for indemnity.

Immediate x-ray examination in an endeavor to ascertain new injuries, will often times disclose old injuries, which, when revealed to the patient, have a tendency to make him recover spontaneously. Of course, such an immediate recovery following an explanation of the findings rests well upon the mind of the employer.

In conclusion then:

1. There is a differentiation between neurasthenia cases.
2. The symptoms of neurasthenia of traumatic type are always aggravated by neighborhood round tables.
3. Settlements in the form of lump sums are good therapeutic agents.
4. From the standpoint of a corporation it is advisable that all cases go to a trial and not be settled out of court.
5. The record later is of use to the defense, should the trial ever be reopened.
6. Continual observation makes one more adept at spotting the malingerers.
7. A careful examination will sometimes reveal the secrets of a most clever malingerer.

MEDICAL ETHICS

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DEFINITION OF ETHICS

Ethics is the name generally given to the science of moral philosophy. In its widest sense it would imply an examination into the general character or habits of mankind, and would even involve a description or history of the habits of men in particular societies living at different periods of time. However, ethics is usually confined to the particular field of human character and conduct so far as they depend upon or exhibit certain general principles commonly known as moral principles. Men, in general, characterize their own conduct and character and that of other men by such general adjectives as good, bad, right, and wrong, and it is the meaning and scope of these adjectives, primarily in relation to human conduct, and ultimately in their final and absolute sense, that ethics investigates. (Encyclopedia Brittanica).

REASON FOR MEDICAL ETHICS

A contemplation of ethics as applied to the medical profession is particularly appropriate because of the peculiar and unique relation which the members of the healing art occupy in their dealings with the rest of society. The personal contact between a doctor and his patient is not paralleled by that of any other profession. The intimate relationship of a lawyer with his client, or a moral teacher with his confident do not begin to approach that of a doctor with his patient, where a word or act may avert or precipitate a tragedy in a family, or may involve a community or state in the struggle with an epidemic disease. These problems and responsibilities, to which we have all become more or less accustomed, and possibly indifferent, may well be again brought to our attention, for familiarity with these responsibilities has lead to indifference and even contempt of ethical considerations.

HISTORY OF MEDICAL ETHICS

The history of medical ethics is essentially that of medicine itself, for until the ethical idea grew and dominated medical practice, medicine could not have been considered a profession.

Folk lore of all races and tribes has always connected medicine with superstition and witchcraft. In the backward races of the present, and with our own race preceding the dawn of history, the healing art, if it could be so termed, was inseparably intwined with mysticism. The earliest practitioners were the priests, and logically, the ethical practices of the priesthood became the ethics of the medical practice of the time.

EARLIEST PRACTICE ACT

The earliest known code of practice is that of Hammurabi, a king of Babylonia, about 2500 years before Christ. This code was discovered in 1901 and consists of sixteen columns of cuneaform text, engraved upon a monument of black stone, eight feet high, which was erected in the acropolis of Susa. It is the opinion of archeologists that similar monuments were erected in other centres of population, that the text of the then extant practice act might be available for the guidance of such of the population as might be interested or concerned. If this surmise be true, it would indicate that the practice of medicine was well established, and formed an integral part of the social system of the time. The spirit of the times as indicated by the inscription was decidedly paternalistic, and would indicate that the recent attempts of the state to dictate the financial and other relations of the doctor to his patient were not entirely original. For example:

If a physician operate on a man for a severe wound, or make a severe wound upon a man with a bronze lancet and save the man's life; or if he open an abscess in the eye of a man with a bronze lancet, and save that man's eye, he shall receive ten shekels of silver as his fee.

If he is a freeman, he shall receive five shekels.

If it be a man's slave, the owner of the slave shall give two shekels of silver as his fee.

If a physician operate on a man for a severe wound with a bronze lancet and cause the man's death, or open an abscess in the eye of a man with a bronze lancet, and destroy the man's eye, they shall cut off his fingers.

If a physician operate on a slave or a freeman for a severe wound with a bronze lancet and cause his death, he shall restore a slave of equal value.

If he open an abscess in the eye with a bronze lancet and destroy his eye, he shall pay silver to the extent of half his price.

If a physician set a broken bone for a man or cure his diseased bowels, the patient shall give five shekels of silver to the physician.

By these examples, we see that the ethical idea had made but slight growth at that time, or at least the growth of ethics is not regarded in the savage penalties inflicted upon practitioners for failing to cure. Little trust was apparently placed in the good intentions of the wielder of the bronze lancet, and we may be justified in assuming that such laws did not gain current publication in the market place before the need of curbing a greedy and unscrupulous profession made them necessary.

GREEK LEGENDS

The ancient Greeks peopled Mount Olympus with gods and goddesses, of whom Zeus was the presiding deity. These beings had all the passions and frailities of mortals living below. Disease overtook them, and Apollo was their physician. The gods at that time were not above forming alliances with mortals, and Apollo, the divine physician, came down to earth, marrying Coronis, who afterwards lived on the heights of Olympus. To this union was born Aesculapius, who was instructed by Chiron, the Centaur, to be a physician. Though born a god, Aesculapius had a human heart from his mother, and while roaming the heights of Olympus, he was troubled by the sight of sickness and suffering among mankind below. So he left Olympus to dwell on earth among mankind and heal them of their infirmities. In the course of time he married, and of his children there were two daughters, Hygeia and Panacea. Panacea gathered the herbs from which her father made his healing medicines. Her sister Hygeia devoted her time to teaching people how to keep well.

During the time of the teaching and practice of Aesculapius and his two daughter, Pluto, the god of the under world, noticed that the number of new arrivals at hades was diminishing markedly, so he hastened to Zeus and complained of the lack of patronage. After due consideration, Zeus was convinced that Pluto had just grounds for complaint, and as Aesculapius was to blame, Zeus hurled a thunderbolt at him, disabling the old man. Ever afterwards on his rounds of mercy, he was compelled to support himself upon a rod or staff, about which was entwined a serpent, symbolical of wisdom.

Aside from the general interest which this portion of the Greek mythology holds for medical men, we may observe that this is the first instance where the general ideas of pity for the afflicted, and honor and pride in the profession is recorded. To the student it is interesting to note that these sentiments apparently lay dormant until expressed by the Nordic race then dominant in Greece, the Orientals being then, as now, unconscious of or indifferent to the principles of honor and fair play.

HIPPOCRATES

In the year 460 B. C., and of the family of Asclepidae, was born Hippocrates, believed to be either the nineteenth or seventeenth in direct descent from Aesculapius. His father was a physician, and his first teacher. His early studies were in the famous Asclepion of Cos, the city of his birth, which we have every reason to believe was one of a number of carefully conducted hospitals throughout Greece, with a curious system of case records in the form of votive tablets left by the patients, which recorded the symptoms, treatment and results of each case. He had these records at his disposal, and also had an opportunity to watch the training of athletes and the treatment of their injuries in the gymnasia. This, it will be admitted, offered excellent opportunities for the study of clinical medicine, although owing to the respect held by the Greeks for the dead body, his knowledge of anatomy, physiology and pathology were defective.

Apparently of a naturally incisive and scientific turn of mind, he early revolted against the use of charms, amulets and other heritages of witchcraft and priesthood in the treatment of disease, and he expressly recorded, as underlying all his practice, the conviction that however diseases might be regarded from the religious point of view, they must all be scientifically treated as subject to natural laws.

His treatise on Airs, Waters and Places contains the first enunciation of the principles of public health, and his Oath, one of the most famous of ancient medical documents, is the first recorded expression of a code of medical ethics.

THE OATH OF HIPPOCRATES

It is essentially the contract or agreement between a physician and the pupil at the beginning of apprenticeship. In it the student apprentice acknowledged: 1st, reverence of the gods concerned with healing and health; 2nd, respect for the preceptor and his family; 3rd, the fraternal aspect of medicine; 4th, an active acknowledgement of responsibility; 5th, renunciation of criminal practices, including the performance of abortion; 6th, avoidance of gossip concerning patients; and 7th, the shunning of disreputable practices, as lithotomy and possibly castration.

This oath reflected the ideals of practice which were instilled into candidates for professional position and responsibility. These ideals remained the ethical standards of medicine for nearly twenty centuries, through the crumbling of Greece and the rise and fall of Rome, and were cherished as a feeble light in the eastern empire of Byzantium and in the medical schools of Alexandria during the troublous times accompanying the establishment of a stable state of society in Europe during the inception and decay of feudalism.

FEUDAL MEDICINE

During all this time medical practice, for it can hardly be called a science, was taught by preceptor and example, and the oath is particularly adapted for such a system of education. For many years, in fact for several hundred years, the medical profession was unorganized, incoherent, groping without leadership toward no particular objective. Much of the membership consisted of knaves or fools, selfishly engaged in furthering their own interests at the expense of the suffering and ailing public. Practice consisted largely of blood letting and the administration of extraordinary mixtures in which drugs of demonstrated activity were combined with such bizarre materials as powdered unpierced pearls, old men's urine, and virginal menstrual discharges. We will let Chaucer describe a physician of the 13th century:

With us ther was a Doctour of Phisyk,
In al this world ne was ther noon him lyk
To speke of phisik and of surgerye;
For he was grounded in astronomye.
He kepte his pacient a ful greet del
In houres, by his magik naturel.
Wel coude he fortunen the ascendent
Of his images for his pacient.
He knew the cause of everich maladye,
Were it hoot or cold, or moiste, or drye,
And wher engendred, and of what humour;
He was a verrey parfit practisour.
The cause y-knowe, and of his harm the rote,
Anon he yaf the seke man his bote.
Ful redy hadde he his apothecaries,
To sende him drogges and his leturaries,
For ech of hem made other for to winne;
Hir frendschipe nas not newe to beginne.
Wel knew he th' olde Esculapius,
And Deiscorides, and eek Rufus,
Old Ypocras, Haly, and Galien;
Seraphion, Razis, and Avicen;
Averrois, Damascien, and Constantyn;
Bernard, and Gatesden, and Gilbertyn.
Of his diete mesurable was he,
For it was of no superfluitee,
But of greet norissing and digestible.
His studie was but litel on the bible.
In sangwin and in pers he clad was al,
Lyned with taffata and with sendal;
And yet he was but esy of dispense;
He kepte that he wan in pestilence.
For gold in phisik is a cordial,
Therefore, he lovede gold in special.

The fact that the principles of medical ethics and the public both survived stands as self evident proof of their fundamental soundness.

With the rise of the free cities, the barber surgeon was no longer necessarily a camp follower of the numerous warring nobles with their groups and factions, and the establishment of apothecary shops freed the physician from the burden of gathering and preparing his own drugs. Settled places of abode for the general population and improvement in economic conditions made possible the establishment of infirmaries, crude hospitals, probably not so well equipped or administered as the ancient Greek Ascelapia, but a distinct improvement over the conditions of the camp or the wretched hovels of the poor.

Settled places for the treatment of the sick naturally offered opportunities for the study of medicine, and brought new problems resulting from the inevitable conflicts in interests between the various doctors of the community using the common hospitals, and presumably consulting with one another to the benefit of both the patients and the profession.

PERCIVAL'S CODE OF ETHICS

Mutual understandings and customs grew out of these conditions, and the customs of the times were finally crystallized and put in print by Thomas Percival, a British physician of rather more than the average training. In 1803 he wrote what he termed a Code of Practice for the guidance and instruction of his son, who a few years later made it public. In the course of time it was rather widely and unofficially adopted by the British profession, and at the first meeting of the American Medical Association in 1847 a code of ethics, which was essentially an adaptation of Percival's Code to American conditions, was adopted.

PRINCIPLES OF MEDICAL ETHICS

This code, now known as the Principles of Medical Ethics, has been slightly altered from time to time to keep it in step with modern problems, until it has now become one of the most extraordinary documents adopted by any profession. Joining, as it does, high ideals with everyday practice, it is unique in its universal application to the problems of the entire profession. With no claims of infallibility, it forms the article of faith of a living religion, of which we all are high priests, to the exact measure of our own honor and sincerity of purpose. Some may profess to ignore it, and many more ignore it while professing allegiance to its principles, but none with honor and honesty may claim ignorance of its principles.

A detailed review of the Principles of Medical Ethics would be out of place at this time. A general outline shows it to consist of three chapters, the first on the Duties of Physicians to Their Patients, the second the Duties of Physicians to Each Other and the Profession at Large, and the third on the Duties of the Profession to the Public.

As might be expected, the first and last chapters are brief and general in their statements, merely calling attention to the duties and responsibilities of the profession to humanity, represented individually as patients, and collectively as the public. The chapter on the duties of Physicians to each other and the profession at large is more specific, outlining the procedure in practically all situations which might cause discord and conflict within the profession.

Following these three chapters is a brief concluding statement, which may well be quoted in part:

> "It is incumbent on the physician that under all conditions his bearing toward patients, the public and fellow practitioners should be characterized by a gentlemanly deportment and that he constantly should behave toward others as he desires them to deal with him. Finally, these principles are primarily for the good of the public, and their enforcement should be conducted in such a manner as shall deserve and receive the endorsement of the community."

SUMMARY

A consideration of the ethics of the medical profession form the earliest records to the present reveals that on the whole, it has been neither much better nor much worse than the ethical concepts of contemporary social systems of the times. Usually in the lead, and occasionally, as in the middle ages, falling behind, medical ethics has always been the summation of the ethics of the individual members of the medical profession. At present, because of the comparatively high standards required of those who seek entrance into the professional ranks, it is of a comparatively high order. It is true that the general high level of integrity among medical men creates a golden opportunity for individual members of the profession who lack those high ideals, to take advantage of the confidence and trust reposed in the profession as a whole by the public, to further their selfish individual ends. The remedy for these individual cases is not easily suggested. Perhaps they had best be dealt with as individual cases, for as there are now, there always have been and always will be, individual members of the profession who are less honest, less conscientious, whose vision is less clear, perhaps whose temptations are greater, to abuse the trust placed in them, and whose patients will continue to be victims to be sacrificed on the altar of their greed, rather than suffering and ailing humans to be healed and comforted.

Since there is nothing in the process of gaining a medical education that makes an honest man out of a dishonest one, it might be well to examine the prospective student carefully as to his moral and spiritual qualifications. Some form of ceremony similar to that required of novitiates into the mysteries of medical education in Greece at the time of Hippocrates might be required of matriculants into medical schools, that the prospective student might be acquainted, from the beginning of his medical education, with the fact that he was entering an ancient and honorable profession, with peculiar responsibilities, and from this early beginning, an effort be made throughout his training to acquaint him with the possibilities and requirements of Medical Ethics.

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"Sick people are proverbially ungrateful. Physicians rarely get the appreciation that is due them. Patients frequently pay them what is justly due them in a begrudging manner. And because of this situation doctors are often forced into a position where they have to look out for themselves financially."

THE CONQUEST OF DISEASE*

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In the short period of time allotted me here I can only touch upon the high spots of a subject so large as The Conquest of Disease. It is certainly gratifying that the public is showing an ever increasing interest in matters pertaining to good health and longevity.

The attainments of American public health work and preventative medicine are almost miraculous. The average life span in the 16th century was 20 years and in 1845 it had jumped to 40 years. In 1875 to 45 years and now the average life expectancy is 58 years. When Lincoln was president 20 babies out of every 100 died before one year had passed and now only 10 die.

Great strides have been made in the control of cancer by educating the people to seek relief early when the first symptoms are felt for it is usually in the early stages that relief and cure can be obtained. Heart disease is the most serious affection tending to reduce the life span. The death rate has jumped from 130 to more than 155 per 100,000 because of the speed at which human life unreels itself today and the growth of chronic affections which bring death through the secondary cause, heart weakness. It should be possible to lengthen the span of human life to the scriptural age of three score and ten but if we do so it will be done by education. The newspapers of America can do this because America is a nation educated by its newspapers. One outstanding indication of this is the aid that they have given us in the fighting of cancer by educating the public to the necessity of early diagnosis of suspected affections. I am firmly of the opinion that every man or woman should obtain a searching physical examination at least every two years. Such periodic examinations have proved to be most effective in prolonging life. The Equitable Life Insurance Co. has been able to prolong life an average of 4½ years among a group submitting to regular examinations and correction of infections thus discovered.

The life expectancy in fat people is not nearly so good after thirty years of age as the thin person. Every fat person is a candidate for diabetes and gall-stones.

One of the greatest strides in preventative medicine in recent years is the control of diphtheria. Before the use of antitoxin one of the most heart-rending of human experiences was to stand by the bedside of a child, a few hours before in the fullness of vigorous youth, and see that child dying of asphyxiation from "membranous croup," as it was then known, or of toxemia, conscious to the last moment. Knowing the uselessness of the various curative measures which had been proposed, the physician felt that his hands were tied, except that in some cases the insertion of a tube into the windpipe gave relief, but even this was often temporary. Antitoxin administered early and in sufficient doses is one of the most safe and certain curative measures of which scientific medicine has knowledge. To see the membrane covering the throat of a child accompanied by all of the symptoms and signs of the disease, to see it extend upward to the nose, or down into the larynx, to administer antitoxin and then see that membrane dissolve and disappear in a few hours, with lessening of all symptoms of the disease—that is by contrast with the picture of the days before antitoxin one of the most thrilling and gratifying experiences of the physician.

By the use of antitoxin, the mortality rate has been reduced from nearly 50% to less than 9%. In recent years, by the discovery and use of diphtheria toxin-antitoxin, still greater good can be accomplished in the prevention of diphtheria and the slogan of preventative medicine now is "no more diphtheria after 1930". An outstanding example of what can be done in the prevention of this dreaded disease is the work of Dr. E. R. Hayes of Falls City, Nebraska. Through his efforts 800 of the 1200 school children of Falls City were immunized to prevent diphtheria and 900 were vaccinated to prevent smallpox.

Smallpox is another preventable disease. It is a national disgrace. Next to India the United States has more smallpox than any other country exceeding that of European and Asiatic Russia. In the year preceding June 30, 1925, the increase of deaths was 628 per cent over 1923; among the 4,000,000 American soldiers in the World war, there were but 979 cases of smallpox and but 15 deaths. Massachusetts, with 400,000 more people than California, but with law enforcement, from 1919 to 1924 had but 126 cases of smallpox against California's 26,651 for the same period. California had repealed the earlier laws enforcing vaccination.

Typhoid is still another preventable disease.

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*Presidential address delivered before the Republican Valley and Tenth Councilor District Medical Society, Holdrege, May 26, 1927.

It has been almost eradicated due to better hygiene and sanitation. It can be prevented by immunization by means of three injections of serum at weekly intervals. Occasionally we have outbreaks of this disease that are very disastrous before the source of infection is located like the one at Hastings, Nebraska, less than a year ago, where there were about 25 cases with seven deaths all due to someone in a dairyman's family having the disease and spreading it through the milk supply.

It will be remembered that a few years ago the newspapers and periodicals contained many articles on the subject of "The use of iodized salt for the purpose of prevention of goiter." By experience it has been found that this was wrong in a measure for the reason that the iodine whipped into activity a latent or silent inactive goiter in adults which has caused great increase in the number of surgical operations for goiter over the entire country, however, it does prevent the development of goiter in children and especially at the adolescent period. It is not safe to use iodized salt after one is past 16 years of age.

Tuberculosis or the great white plague is another communicable disease that has yielded to a marked degree to hygienic or better living conditions as illustrated by the report of the Massachusetts registration. There were 500 deaths per hundred thousand population from 1850 to 1860 with a decline to 150 from 1910 to 1920.

The transmissable or catching maladies are definitely on the run. In civilized communities such dire plagues as Asiatic cholera, typhus, leprosy, smallpox, yellow fever and similar terrifying spectres of the past are now almost unknown. We, in the security of the twentieth century, find it impossible to picture the horrors of the days of the uncontrolled epidemics when men and women died like flies in the first frost of autumn, and their rotting bodies were left unburied in the streets because none could be found who would give them decent burial.

These diseases are still rampant in countries in which ignorance, dirt and disorder reign, but in our country, NO! We have set the resources of science to the great task of driving out disease, and it is succeeding amazingly.

The venereal diseases are still at large, but not because of the inadequacy of medical knowledge. Their prevalence can be charged rather to lack of economic, sociologic and moral adjustment of needs of the day.

Quoting Kanavel—"The present-day physiologic surgeon will rewrite the diagnosis and treatment of the disease, will anticipate and prevent pathologic changes, and will pursue surgical procedures having for their end the restoration of normal physiologic function rather than normal anatomic conditions. This requires, however, long training in the basic sciences: Surgery is less of an art today and more of a science. The young surgeon must be content to spend years in unremunerative laboratory research before he assumes the responsibilitiy for the technical procedures of surgery; great problems are to be solved, equation by equation. Pasteur has rightly stated 'In the fields of observation, chance favors only the mind that is prepared'."

A generous public has provided buildings and equipment—the material needs—but it must also recognize the necessity for endowment, so that young graduates of ability may spend the early years of their careers in the unremunerative though vitally important basic studies. We are prone to think that we have reached the limit of great discoveries in medicine; but the conquest of yellow fever, scarlet fever, diabetes, is within the memory of the youngest here; pneumonia, cancer and other diseases are not unconquerable; cancer is now being attacked through chemistry, and no one can say but that any day some trained mind may grasp the truth that still lies hidden from us."

Every normal person wants to live long and well, and to avoid pain, discomfort and death as long as possible. Disease can defeat this most natural ambition. Disease is the outstanding physical enemy of the race of man. The conquest, the eradication of disease is paramount among the constructive problems that society has set for itself. The prevention and cure of disease is the proper purpose of every citizen and of every government, be it local, state, federal or international. The assistance of every person from the humblest to the highest is needed in the great work of making the human race happy, healthy and efficient.

But to one great group of trained men is set aside the custody of public health. From a physical standpoint at least, the medical profession has the most important job in the world. Of its accomplishments in the past the profession can thrill with pride and can say of almost every transmissable disease, "We have met the enemy and they are ours."

SO HAVE YOU

"Have you heard that story about the feet?"
"Nope."
"You have two."

CASE REPORT—CHOLELITHIASIS*

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Mrs. F., widow, aged 58, April 19, 1925, about eleven p. m., was awakened with sickness of the stomach and vomited her evening meal. She had eaten a dinner of beefsteak. After vomiting she continued to have a good deal of distress in her stomach and right side. She recovered in three or four days and was quite well for about three weeks.

Then she had another attack following an evening meal of beefsteak. She again suffered distress in her right side and stomach. She vomited. She did not develop any fever, but was quite tender to pressure over the gall-bladder region. Distress in the stomach and gall-bladder region continued several days. She also showed slight jaundice. The urine did not show any evidence of bile.

After this she again felt quite well. Deep palpatation over the stomach and gall-bladder did not cause pain.

July 7, 1925, she suffered another attack of distress and vomited. This attack was attributed to a hearty meal of dried codfish. This attack was followed with slight fever and marked tenderness to pressure over her gall-bladder. Palpatation showed quite a large lump in the gall-bladder region. Her stomach was tender to pressure. She was troubled with gas in her stomach. Food of any kind distressed her and she occasionally vomited. Percussion over the gall-bladder and the stomach caused pain. She was confined to her bed. Lying on her right side or on her back increased the pain in her right side. The lump in her right side was easily felt. It felt to be as large as a medium sized hen egg. A dull pain at times extended to her back and upward to the lower margin of the scapula. At times the dull pain was felt as a burning sensation. The pain did not radiate in any direction except to her back and to the left above umbilicus. Jaundice did not deepen and stools were normal color. Her appetite was poor and any solid food distressed her stomach and increased the dull pain in the gall-bladder.

On July 26, 1925, her condition had improved so that she sat up in bed for half an hour. The lump in the gall-bladder region disappeared in 6 or 7 days, following the attack of July 7; but she continued weak and lost flesh quite rapidly. Her stomach continued to be distressed if much food was taken at any one time. But she began to feel better and did not suffer pain in her right side. She gradually got up and about and gained strength.

Aug. 19, 1925, she came to my office for a gastro-intestinal x-ray examination. Her weight had been reduced from 157 pounds to 117 pounds. Although no lump or mass could be felt in her stomach or upper abdomen I feared carcinoma of the stomach.

The x-ray films revealed a fishhook type of stomach of normal size and smooth in outline. At no time did I get a good duodenal cap. The stomach functioned quite well for the two hours and thirty-five minutes. After this time it emptied slowly. At 6 hours and 7 hours and 40 minutes after the meal there was a residue although no evidence of organic disease of the stomach was revealed and subsequent history of our patient proved this finding to be correct. The first film of the stomach revealed a good sized stone near the gall-bladder and also showed the size, shape, and position of the gall-bladder. It was deemed necessary to check up the gall-bladder condition by taking cholicystograms.

I phoned a number of doctors who do x-ray work to get the necessary tetraiodophthalin. But none had any and I could get none in Omaha. However, we took x-ray films of her right kidney and gall-bladder which revealed a stone smooth in outline, with a dark center and a fairly brilliant circumference. The stone was about the size of a small marble. It is apparently located near the mouth of the cystic duct. The gall-bladder is irregularly oblong, rather small at the distal end and widens out to about one inch at its middle portion. Its distal 2-3 is quite brilliant. At the junction of the proximal 1-3 with the middle third it is roughly irregular and a number of small irregular stones are seen. The distal 2-3 seems filled with minute stones. The kidney shadow is shown but is negative.

Sept. 16, 1925, Mrs. F. was given 12 capsules of kerasol. Sept. 17, x-ray films were taken at 12, 18, 19 and 36 hours after she took kerasol.

The stone was now revealed in marked contrast to the surrounding tissues. The size, shape and position of the stone, and gall-bladder are quite the same as of Aug. 24. The film taken at the 18 hour period after taking kerasol reveals gall-bladder less brilliant and a trifle smaller. The film taken at 19 hours (one hour after eating crackers), reveals the gall-bladder some longer, less broad, and less brilliant; all taken as evidence that the gall-bladder is emptying. The film taken at the 36 hours reveals the stone more brilliant and the dark center much smaller.

Diagnosis—Cholelithiasis with distal 1-2 to 2-3 of the gall-bladder filled with minute stones, and also a large stone in the cystic duct. The attack of July 7, was most likely due to temporary blocking of the cystic duct.

Mrs. F. was informed of her condition and advised that when her general health improved enough she should have the stone and gall-bladder removed. To this she would not consent.

I visited her at her home, May 15, 1927. She was well and looked well. She now weighs 142 pounds. She eats anything she likes with impunity. I gave her the necessary kerasol capsules to take.

May 16, 1927, I took x-ray films which reveal the gall-bladder and stone in almost the same size, shape and position as on Aug. 24, 1925.

At present percussion and palpation of upper abdomen fails to elicit any pain or tenderness in stomach or gall-bladder.

VERTIGO—SECONDARY TO PARANASAL SINUS INFECTION

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Vertigo is often based on a toxemia of focal origin and the following case history is cited as a striking example:

Mr. J. C. M., age 38, was referred to me on July 3, 1925, by Dr. Rodney Bliss of Omaha for an examination of the patient's vestibular apparatus.

He gave the following history: About June 20th had a slight attack of dizziness lasting only a few seconds. The disturbance caused him no concern until the next day when he had a similar attack of longer duration and of increased severity. Repeated attacks on following days occurred with increased frequency until July first when he suddenly became violently nauseated and dizzy, and had to be assisted home. Associated with this he noticed that he had double vision when turning his head or eyes to either side, and a tendency to fall to the left.

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*Read May 24, 1927, at Douglas County Medical Society.

General physical examination as reported by Dr. Bliss was negative except for the findings pertaining to the vestibular apparatus.

Neuro-vestibular examination: Standing posture with eyes open, normal; with eyes closed, patient became unsteady and eventually fell toward the left. In attempting to walk he made progress only with assistance and tended to deviate to the left. Pupils equal, regular and reacted well to light and accommodation. No extra ocular muscle palsies present, but on turning eyes to the right, a coarse horizontal nystagmus with the quick component to the right was present. On looking up a slight horizontal nystagmus in the same direction was noted. (This does not constitute a "vertical nystagmus").

The auditory portion of each eighth nerve was normal. The vestibular portion as tested by the Barany turning chair gave the following findings: First, testing the horizontal canals with the head inclined forward thirty degrees, turning to the right produced a nystagmus of good amplitude with a duration of only ten seconds. Turning to the left produced a good nystagmus, but of only sixteen seconds duration. Past pointing elicited from stimulation of the horizontal canals, was in the right direction but of impaired duration, particularly after turning to the right.

Stimulation of the vertical canals by turning with the head inclined one hundred and twenty degrees forward, showed a markedly impaired falling tendency to the right, after turning to the right, and only moderate following tendency after turning to the left.

No impairment of function of any of the other cranial nerves was observed. Ophthalmoscopic examination was negative.

Examination of the nose and throat showed a badly deflected nasal septum to the right. The right middle turbinate was swollen and yellow pus exuded from under and over it. Transillumination of the sinuses demonstrated a perfectly black right antrum, and other sinuses being clear. Teeth were apparently negative. Tonsils small and buried, with no marked evidence of infection. X-ray of sinuses showed an opaque right antrum, with no definite pathology apparent in the other sinuses.

A tentative diagnosis of an involvement, probably toxic, of the vestibular portion of the left eighth nerve was made with a recommendation to eliminate the evident nasal infection.

The patient was admitted to the hospital where a spinal puncture was done, which was negative as to increased pressure and cell count. A spinal fluid Wassermann was also negative.

On July 8, 1925, a submucous resection of the nasal septum was done, and an intranasal drainage of the right antrum, ethmoid, and sphenoid sinuses. The antrum was full of pus, and in spite of the negative x-ray I found the ethmoid and sphenoid also badly infected. The ethmoid labyrinth, including the bony capsule, was so fragile and necrotic that the limits of the labyrinth were made out only with difficulty.

There was no post-operative reaction except for severe headache, possibly partly attributable to the spinal puncture. Three days post-operative, there was a noticeable diminution of the nystagmus, and although the patient was kept strictly in bed the sensation of vertigo seemed much less when he moved or turned his head. On July 13th, he was allowed to be up at intervals, only slight nystagmus being present and practically no vertigo. Tonsillectomy was done on July 27th in order to obviate any absorption from that source. Two days later he was permitted to return home. Convalescence was uneventful, and up to the present (April, 1927) there has been no return of his symptoms.

The diagnosis of an involvement of the vestibular portion of the eigth nerve. was based on the following:

1. The definite impairment of vestibular reactions denoted an organic lesion.

2. A nystagmus to the right suggested a left sided involvement.

3. A peripheral lesion suggested by a reduction of all responses from the affected side (i. e., nystagmus, vertigo, and past pointing), particularly so when the reduction is proportionate.

4. Apparent absence of any disturbance of other functional pathways.

5. The nerve itself, and not the labyrinth, was probably affected, for it would be unlikely to have such a severe process affect the static portion without including the cochlear portion also.

The diagnosis seems confirmed by the prompt recovery after removal of the evident infection, and by the fact that the nystagmus gradually subsided which is not usually the case when the cause is more centrally located.

—1620 Medical Arts Bldg.

THE USE OF ROSENOW'S SERUM IN THE TREATMENT OF INFANTILE PARALYSIS*

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Omaha, Nebr.

B. P. Male, age seven years.

Previous history: Breast fed, ten months. Had measles at two and one-half years of age; scarlet fever at four years—recovery complete, without complications. Tonsils and adenoids removed a short time after his recovery from scarlet fever.

History of present illness: On August 28, 1927, he suddenly vomited, had headache, and a high fever. This fever and headache continued with slight periods of remission for about one week. Six days after the onset of his illness his temperature was 103.4. He had considerable neck rigidity and his throat was red and inflamed. On the next day, or seven days after the onset, he was given twenty cc. of Rosenow's serum, intramuscularly. At this time there was no paralysis. Three days after the injection, the patellar reflex on the left side was completely gone. He moved his left leg with difficulty and there was considerable muscular weakness in this leg. There was no other involvement. Neck rigidity was present throughout the attack, but this became very much less after the first injection of serum. A second injection of 20 cc. was given on the day the paralysis became apparent. With the onset of paralysis, the temperature dropped to normal and remained so. His convalescence was uneventful, except for a marked urticaria and slight serum sickness.

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*Reported at weekly clinical meeting Lord Lister Hospital, September 22, 1927.

At this time there is no paralysis and except for a slight muscular weakness in the left leg, he is a perfectly normal boy.

Comment: We all realize that many abortive cases of this disease occur and that complete recovery takes place without treatment other than rest in bed and ordinary nursing care.

To a great extent our thoughts concerning this disease and its symptomatology must be changed. If anything is to be accomplished in the way of cure, the disease must be recognized as present in a clinical way before paralysis appears. This must be, whether or not Rosenow's serum, convalescent serum, or other procedure finally becomes the recognized treatment. One can readily understand the reason for this when the pathology of the disease is considered. How shall we recognize poliomyelitis early? First, the incidence of the disease. It is important to bear in mind that poliomyelitis has its chief incidence in the months from June to November. Every illness, especially in children, during this time, should be regarded with suspicion and a careful search made for the possibility of an acute poliomyelitis. The most reliable single diagnostic symptom is neck rigidity; it is a little difficult to elicit, but if care is taken, and the normal resistance of children on examination for this symptom is taken into consideration, the abnormal will be apparent. It is the most common symptom present and the one on which most reliance can be placed.

At present it is impossible for the clinician to say in advance which case will be the abortive type of the disease and which will not.

The case here presented makes the seventh we believe we have recognized before the onset of paralysis. All of them have received Rosenow's serum early, before paralysis. All have recovered without paralysis. At present Rosenow's serum offers the only rational therapy. To be effective it should preferably be given before paralysis. Therefore, it is important that the physician have the disease in mind from June to November in each year; that every case of slight illness in children be regarded with suspicion and that careful clinical search be made for a possible poliomyelitis.

STATISTICS OF TUBERCULOUS PERITONITIS FROM THE CLINICAL RECORDS OF THE UNIVERSITY OF NEBRASKA HOSPITAL

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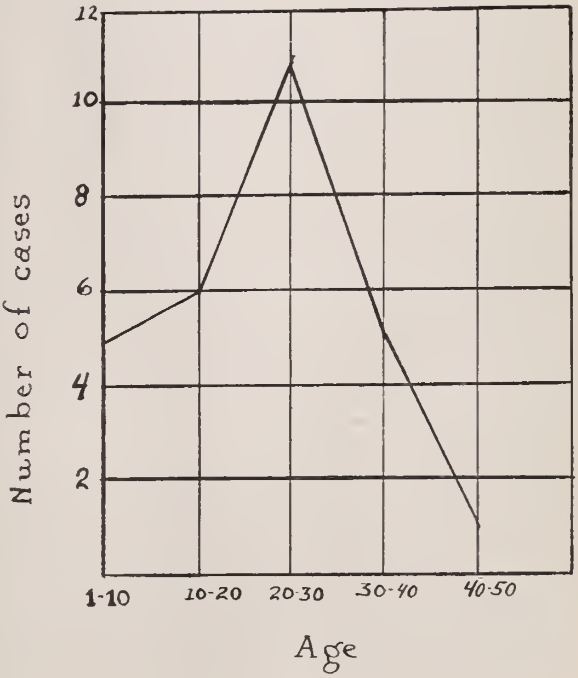
Symptoms of tuberculous processes have been recognized clinically for hundreds of years, Hippocrates having given an accurate description of the symptoms and course of pulmonary tuberculosis. Knowledge of the disease has increased step by step from belief in the contagiousness of the disease by contemporaries of Hippocrates, the association of tuberculosis and phthisis by Sylvius in 1695, the accurate description of tubercles by Stark in the Eighteenth century, the demonstration by Villemin in 1869 of the transmissibility of the disease by some "subtle agent", to Koch's discovery of the tubercle bacillus in 1882.

Along with the development of knowledge of the pathology of tuberculosis and the anatomy of the human body, has grown a classification of the tuberculous processes dependent on the organs or tissues involved. Tuberculous peritonitis, when first recognized as a clinical entity, was considered by all to be fatal in almost every instance. With the work of Koenig in 1894, hope was kindled in the minds of the unfortunates that surgery might prove to be the therapy to



restore them to health(1). Since that time tuberculous peritonitis has furnished the subject for many a heated discussion in medical gatherings as to the relative merit of the different methods of management. It has been termed the orphan of medicine, being claimed and disowned in rapid succession by surgeon and internist alike(2).

The following report is based on a series of 28 cases of tuberculous peritonitis admitted to the University Hospital from 1917 to July 1, 1927. The purpose of the study was to determine the relative merits of surgical vs. non-surgical treatment, in the light of after results and to compare these findings with those published elsewhere.

Of the 28 cases, 6 were Caucasian, 21 were Negro and 1 was Philippino. The largest number of cases was found to be between the ages of 10 and 30 years of age, the youngest being 1½ years old at the time of admission and the oldest being 46 years.

TABLE NO. 1

Race	Male	Female	Total
Philippino	1	0	1
Negro	13	8	21
White	3	3	6
			28

Dark skin races 22, light skin races 6.

TABLE NO. 2

Age	No. of Cases
Under 10	5
10-20	6
20-30	11
30-40	5
40-50	1

Of the 28 cases, 10 were surgically treated, abdominal section being made in 9 instances and a pelvic abscess being drained per vaginum in one instance. Of these cases treated by abdominal section, 4 are still living, 3 are known to be dead, and the whereabouts of 2 is unknown. The one case in which the pelvic abscess was drained, (colon bacillus infection), also termined fatally, within 2 months of the time of admission. Of the four cases still living, 2 were given no additional treatment, 1 was given x-ray and the fourth was given ultra-violet light exposures post-operative. The three cases of this group known to be dead, terminated within 2 months of the time of operation.

Of the 18 cases treated non-surgically, 4 are known to be alive and in good health, 10 are dead, (one an accidental death 2 years after dismissal and while in apparent good health), and the whereabouts of 4 is unknown. Of the 10 deceased, 5 died while in this hospital, 1 died accidentally as above, and 4 died within one year after dismissal from the hospital.

TABLE NO. 3

Living Surgical Patients

Age at Operation	Time Since Operation	Race	Sex
39	2 years	Negro	Female
9	4 years	White	Female
23	5 years	Philippino	Male
26	½ year	White	Male

TABLE NO. 4

Living Non-surgical Patients

Age at Admission	Time Since Admission	Race	Sex
19	1 year	White	Male
24	2½ years	Negro	Female
6	4 years	Negro	Male
18	In hospital	White	Female

The duration of the symptoms in these 28 cases as elicited in the clinical history, varied from 1 day to 3 years with the average duration before admission 3 to 4 months. The two groups of cases were essentially the same as to the duration of clinical symptoms before admission. The complaints on entrance are summarized as follows:

Swelling of the abdomen	19	instances
General weakness	8	"
Loss of weight	6	"
Cough	6	"
Fever	6	"
Pain in the abdomen	5	"
Nausea and vomiting	5	"
Constipation	4	"
Night sweats	3	"
Shortness of breath	3	"
Insomnia	2	"
"Dyspepsia"	2	"
Loss of appetite	2	"
Sleepiness	1	"
Irritability and crying (infant)	1	"
Headaches	1	"

Of the 8 cases terminating while in the hospital, necropsy records are available on 7. Tuberculous processes were found other than in the peritoneum as follows:

Lungs	5
Mesenteric glands	3
Retro-peritoneal glands	3
Bronchial glands	2
Adrenals	1
Intestines	1
Joints of extremities	1
Cecum	1
Meninges	1
Pelvic abscess	1
Endometrium	1
Pleura	1
Spleen	1

These findings and statistics are essentially in accord with those reported from the Johns Hopkins Hospital(3). The fact that tuberculous pathology is in every instance found elsewhere in addition to the involvement of the peritoneum, together with an anatomic and physiologic consideration, makes it seem unlikely that there ever exists a primary tuberculous peritonitis. The route of peritoneal infection still lies in the realm of speculation, but three theories are at present considered, hematogenous, lymphogenous, and by contiguity of tissue(3). Each of these theories has enthusiastic advocates, each is sufficient to explain individual cases, and none of them is adequate to explain all. The respiratory and gastro-intestinal systems form the portals par excellence for the entry of the tubercle bacillus, while the genito-urinary system, especially in the female, offers a third gateway to the peritoneal surfaces.

Once having set up its activities within the peritoneal cavity, the pathology caused by the tubercle bacillus has been classified into three groups on the basis of necropsy and clinical findings, plastic, exudative and ulcerative types. That these three apparently different forms of pathology should be due to three different strains of the same organism, or that there should be three clinical entities is not so likely as that each is a manifestation of the same process within a different environment; a different resultant of unlike forces of virulence and resistance. Be that as it may, it is almost universally recognized that it is the exudate form of the disease which offers the most likelihood of benefit from surgical procedures(4). Just why opening the abdomen, and draining the fluid from the peritoneum should be of therapeutic value is unknown. Whether a beneficial hyperemia is produced by the drying of the peritoneum in exposing it to the air, or whether the peritoneal exudate which rapidly reaccumulates is richer in immunological antibodies than that removed, is a matter for conjecture and study. It is equally as widely recognized that the plastic and ulcerative types of the disease form definite contra-indications to surgical procedures, except in case of emergency to alleviate a condition such as intestinal obstruction(4)(5). Surgery may be of distinct benefit in properly selected cases(1), and of definite harm when used indiscriminately. In any event, surgery should be coupled with the fresh air, sunshine, and diet regime of tuberculous cases in general(2).

The disease at best offers a poor prognosis and demands the utmost vigilance on the part of the medical profession to recognize the early symptoms of this disease and to come to an appreciation of the conditions and type of pathology existing in the individual case. Then and then only can a rational selection of the type of therapy be made, whether ultra-violet rays, pneumoperitoneum or surgery(6)(7). It is rather an integration of medical, surgical and physio-therapeutic care that offers the best prognosis, each case being managed as its symptoms and progress indicates.

CONCLUSIONS:

1. Dark skin races are more susceptible to tuberculosis of the peritoneum than are the light skin races.
2. Males are slightly more susceptible than females.
3. The age of greatest incidence is before 30.
4. The universal symptom is swelling and distention of the abdomen.
5. Tuberculous peritonitis is almost invariably secondary to lesions elsewhere in the body.
6. While surgery seems to offer the best prognosis for recovery, it must be remembered that these cases are a selected group.
7. The best therapy is a combined and interwoven management of each case as individual findings indicate, surgeon, internist and physiotherapeutist collaborating to the restoration of the individuals health.

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REVISING THE PHARMACOPEIA

Apparently some misunderstanding as to the exact nature of the United States Pharmacopeia has given opportunity for criticism of the work of the Revision Committee, particularly of the Subcommittees on Scope and Nomenclature. The first edition of the United States Pharmacopeia, published in 1820, expressed the purpose of selecting from among the substances used in medicine those remedies most worthy of medical employment. To any one at all familiar with the progress of the U. S. Pharmacopeia, it is obvious that it tends more and more to become a scientifically reliable work, to realizing more and more greatly the necessity for established proof of virtue before admission can be granted. (*Jour. A. M. A.*, August 27, 1927, p 697).

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DETROIT MEETING, AMERICAN COLLEGE OF SURGEONS

About three thousand members attended the meeting of the American College of Surgeons at Detroit last month. Nebraska was represented by the usual number of members. About five hundred fellowships were conferred. Dr. Franklin H. Martin, founder and director of the college, was elected president. The clinical program was given in part at Ann Arbor and in part in Detroit. Clinics and demonstrations were conducted during the mornings and afternoons of the four days. The usual array of foreign and American talent was represented at the meetings. The meetings of the American College of Surgeons are an ever recurring inspiration to the surgeons attending.

The hospitalization conference held in connection with the college fully approved the following Nebraska hospitals:

At Alliance, St. Joseph; at Columbus, St. Mary's; at Falls City, Falls City; at Grand Island, St. Francis; at Lincoln, General, Nebraska Orthopedic, St. Elizabeth's; at Omaha, Bishop Clarkson Memorial, Creighton Memorial, St. Joseph's, Immanuel, Nebraska Methodist Episcopal, University of Nebraska and Wise Memorial; at Scottsbluff, West Nebraska Methodist. Rated as conditioned were Mary Lanning at Hastings; Bryan Memorial, at Lincoln; and Evangelical Convent, at Omaha.

Nebraska surgeons granted fellowships are: Dr. John Calvin Davis, Jr., Omaha; Dr. Eugene C. Foote, Hastings; Dr. Nelson H. Rasmussen, Scottsbluff.

BASIC SCIENCE EXAMINING BOARD

Carrying out the intent of the basic science law passed by the legislature last winter, which provides for an examining board in basic sciences, to examine all those who desire to practice the healing art by any method, such board to be composed of scientists not engaged in the practice of the healing art, Hon. Lincoln Frost, secretary of the department of public welfare, has appointed the following as members of the board:

Dr. L. Van Es, head of animal pathology at the State Agricultural college; Professor T. J. Thompson, dean of university student affairs and professor of chemistry; Father Bernard L. Sellmeyer, professor of biology at Creighton university at Omaha; Professor Irving Blake, instructor of anatomy at the University of Nebraska; Soren E. Isaacson, bacteriologist, connected with the Lord Lister hospital of Omaha.

The new board organized by electing Dr. Van Es, president, and Dr. Isaacson, secretary. Two examinations a year will be held.

FIFTY DOLLAR PRIZE FOR TUBERCULAR PATHOLOGICAL EXHIBIT

The attention of the profession is called to the fact that at the last annual meeting of the Nebraska State Medical Association, the Nebraska Tuberculosis Association, by Dr. F. W. Heagey, offered a prize of $50.00 for the best tubercular pathological exhibit submitted to the next annual meeting of the Nebraska State Medical Association. The exhibit may be the product of a person or group. It is hoped that a real interest in the study of tuberculosis may be engendered by this prize offer.

Miss Alice Marshell, 540 Paxton Bldg., Omaha, is secretary of the association.

THE MEDICAL SOCIETY OF THE MISSOURI VALLEY

The Fortieth Annual Meeting of the Medical Society of the Missouri Valley was held in Des Moines, September 14th, 15th and 16th, under the presidency of Thomas G. Orr, head of the Department of Surgery of the University of Kansas. The program was varied, educational and generally conceded to have been of a high order.

Only two essayists failed to appear, W. T. Bovie of Harvard Medical College and James F. McDonald, Professor of Physiology of Creighton University College of Medicine.

Our Nebraska medical schools were represented by Bernard M. Kully, Assistant Professor of Otorhinolaryngology of Creighton University College of Medicine, who talked on Foreign Bodies in the Esophagus and Respiratory Passages; C. A. Roeder, Assistant Professor of Surgery of the University of Nebraska College of Medicine, who read a paper on Pyloroduodenostomy; C. C. Tomlinson, Assistant Professor of Dermatology and Syphilology, and Paul Bancroft of the Department of Experimental Medicine of the University of Nebraska College of Medicine who reported a case of Granuloma Coccidioides, the junior author of the paper being himself the patient; and Alfred Brown, Assistant Professor of Surgery of the University of Nebraska College of Medicine, who talked on Hypoglosso Facial Anastomosis for Facial Paralysis. Dr. Brown came in at the last moment to take one of the hours of Professor Bovie.

It is impossible to pick out the outstanding features of the program. Some of the best received numbers were the neurological clinic of Lewis J. Pollock of Chicago, the Urological clinic of Herman Kretschmer of Chicago; the Gastro-enterologic clinic of George B. Eusterman of Rochester; and the addresses of A. J. Carlson on Facts and Fancies on Present Day Organotherapy and on Recent Developments in Physiology of the Stomach, and an address on the Hopeful Aspects of the Treatment of Carcinoma by David P. Barr, Professor of Medicine, Washington University, St. Louis.

Fred Smith, Professor and Head of the Department of Internal Medicine of the University of Iowa, was elected president; and Ralph H. Major, Professor and Head of the Department of Internal Medicine of the University of Kansas, was made president-elect. Earl Sage of Omaha is secretary-treasurer in the place of Charles Woods Fassett of Kansas City, resigned, who has so long been the guiding spirit of this society, and to whom the profession of the Missouri Valley owes much. Dr. Fassett has been in ill health for the past year and felt he would be unable to go on with his duties. The Executive Council was instructed to draft fitting resolutions and to present to Dr. Fassett a suitable memento of appreciation of the service which he has rendered this society. In view of the resignation of Dr. Fassett it was decided not to have an official journal at present. The dues will be applied wholly to defraying the expenses incident to the meetings of the society.

A movement has been on foot the last two years to rejuvinate this worthy society, which of late had fallen into the "sear and yellow leaf". A new constitution and by-laws was adopted, which states the purpose of the society as follows:

"The objectives of this association shall be primarily educational. It shall give opportunity to the faculties of the universities of the district, to the members of the association and to invited guests to present such work as will tend to place the practice of medicine in the district on a higher scientific plane."

It has been the opinion of some of those interested that a society with the above objectives could be made an educational force of great value. The enlisting of the universities of the district should be of great value. It should insure good programs and enlightened management. It should give the practitioners an opportunity to meet and know the men who are controlling medical education and medical progress in the region. This contact should be advantageous to both practitioner and teacher.

It is to be hoped that the society will receive sufficient support to enable it to build satisfactory programs. The financial support of the profession is necessary to this end. The society should attain in the next few years to a membership limited to a number sufficient to give the necessary financial support and not so large as to become unwieldy. When the attendance exceeds a certain optimum the value of the society to the members decreases rapidly with the increase in its size.

The next meeting will be held in Omaha in November, 1928.

—A. D. Dunn.

RESEARCH INTO THE CAUSES OF CANCER

Dr. Archibald Leitch tells us that up to the middle of the nineteenth century cancer was regarded as a constitutional disease and even to this day the thought is entertained by many. To Percival Pott must be given the credit for recognizing cancer as a local lesion in its initial stages. His observations were made on the chimney sweep who is peculiarly subject to scrotal cancer through the irritating action of soot. He, however, was unable to account for the localization of cancer in the scrotum when the rest of the body surface was equally under the influence of the soot. Now a century later, Archibald Leitch has observed that this soot mixed with sebaceous secretions predisposes in a marked degree to cancer.

It has long been known that crude mineral oils are cancer producing agents. Cancers in animals have been produced experimentally by the continued application of petroleum oils. The cancer of cotton spinners, which commonly effects the scrotum, has been demonstrated to develop as the result of the action of mineral lubricating oils thrown off from the spindles. It is now known that epitheliomata occur with greatest frequency among workers in coal tar. So much for the irritating influences of crude oil. That continued heat applied to the surface of the body predisposes to the development of cancer is exemplified in India where natives carry baskets of heated charcoal in close proximity to the abdominal wall. Scars and indulent ulcers often result and later epitheliomata arise. The smokers' cancer of the lip, as the result of pipe smoking, is yet another example of the continuous application of heat in its tendency to develop cancer.

The baleful influence of the x-rays is attested by Leitch as the most rapidly acting cancer producing agent in man. Whatever the causal agent may be, whether chemical, thermic or mechanical, the resulting lesion is the same. Arsenic applied locally predisposes to the development of cancer, but it has not been generally recognized that the internal administration of arsenic given over a long period of time will tend to produce skin cancer. The answer being that the arsenic is excreted by the skin. In this connection we recall that psoriasis is occasionally followed by cancer of the skin, the result of arsenical treatment.

Such irritating influences as have been mentioned, acting over a period of many years, may and indeed often do result in the production of cancer. This may suggest a reason why cancer seldom arises prior to mid-life. It is not essential to the development of cancer that these irritating agencies be in operation to the time of onset of the cancer. Indeed, there may be a long lapse of time between the cessation of the irritating substance and the development of cancer.

The individual response to these irritating substances varies widely. In many there is no response; in others the response does not go beyond the development of the so-called precancerous lesions, such as fissures, warts and leucoplakia; while in others the development of cancer is certain though it may be long delayed. Were it possible at all times to recognize the irritating factor the problem of prevention of cancer would be readily solved, but unhappily this can be done only in exceptional instances.

While the human race exhibits a marked susceptability to cancer as evidenced by its great frequency, it is none the less true that exciting factors are essential to the development of malignant growth. Ewing does not hesitate to commit himself unreservedly against the parasitic theory. He says that such a theory is incompatable with the known facts about cancer. He regards cancer not as a pathological entity, but rather as a group of diseases and hence not caused by any universal parasite. He affirms that there are about as many neoplastic diseases as there are infectious diseases with no more reason for assuming a single origin for one as for the other. On the other hand, no less an authority than William H. Welch admonishes us to keep an open mind on the parasitic origin of cancer.

The appalling problems presented in the consideration of cancer are supplying an ever-increasing impetus to research workers, and while awaiting definite results from their labors, we, as practitioners, can do no more than preach and practice the gospel of early diagnosis and early removal.

—Palmer Findley.

INDIVIDUAL VS. GROUP INSURANCE

Believing the advantages offered through our group insurance are not generally clearly understood by the members of the state association to be one of the chiefest enmoluments offered by that membership in the state association, it is our desire to submit the following for your serious consideration.

A master policy under which individual certificates are issued is now, and has been for the past year, deposited with your state secretary and which provides that only bona fide members of the state association may procure for themselves extraordinary protection at a ridiculously low annual rate. To those who have availed themselves of this opportunity, there exists a unity producing a common cause, and by that unity builds a barrier against malpractice suits in contradistinction to the separability which has previously prevailed through the "grab bag" methods of securing such protection. We now possess a solidarity not heretofore known to us, rather than the older method of buying such insurance from the salesman presenting the most convincing sales talk, combined with only a perfunctory investigation as to the rationale of his statements, both of which led to a pure state of diversity in which strength of common purpose is next to impossible.

Due to the fact that only members of the state association may procure protection under the group plan as offered and the United States Fidelity and Guaranty Company insure only members, we are provided with the highest type of selectivity in our risks, thereby escaping the ills suffered through promiscuity in acceptance by the insurer of any one presenting evidence that he or she is licensed to practice the healing art in our state.

Simplicity of phraseology in our now existing group plan is of inestimable value because its coverage is not limited by many stipulations and a complexity of meaningless high sounding phrases which cloak some of the policies offered to the medical practitioner with vague, sinister and indirect statements. The salient features of the group policy now in force are herewith presented.

1. Annual Premium of $20.00 for ten and thirty thousand dollars.

2. The Company agrees to pay all damages instead of indemnify against damages to assured or his assistant, etc.

3. Includes negligence as well as malpractice, error or mistake of assured.

4. Includes suits arising from counterclaims for suits of assured in collection of fees.

5. Committee's consent required before settlement of any damages may be given by the company, (three members of which selected by State Association, one member by company, one member by assured). Subject to decision of majority of above committee, the company must defend any claim until all legal remedies have been exhausted.

6. Certificate under policy cancellable by:
   (a) Termination of membership in Nebraska State Medical Association.
   (b) Failure to pay premium.
   (c) Request of assured in any above event the unused portion of premium paid is refunded.

7. Cancellation of master policy only
   (a) On thirty days' notice prior to anniversary date.
   (b) Written notice of majority of assured members in which case unused portion of premium to be refunded as above.

8. Assured must be a member in good standing of Nebraska State Medical Association and company agrees to write no others except members at premium rate stated in paragraph 1.

9. Contract embodies every clause of the Medical Protective policy with the very important addition of that clause under which the company cannot settle a suit without the consent of the assured and through the committee of five.

The stability of our group policy cannot be denied. The United States Fidelity and Guaranty Company has assets of over fifty million dollars and because of the multiplicity of its lines of insurance one may easily come in direct contact with one of its agents in almost every community in the state, as well, it has in almost every community the ablest of law firms retained already to protect its interests. Other companies offering malpractice protection in Nebraska have only assets ranging from fifty thousand to five hundred thousand dollars and most of them have no point of contact except by correspondence, as well as no retained attorneys except in the larger centers. The comparative instability of such companies is undeniable. Such liberality as the acceptance of every bona fide member regardless of use of x-ray or other hazardous specialty in treatment without extra charge, has never before been offered, but under this group plan all are accepted at the stipulated rate per annum, thus escaping the penuriousness of attachment of x-ray riders in the policy or acceptance only with extra charge which is demanded in all individual policies written.

The fact that your membership in Nebraska State Medical Association undisputably entitles you to protection under this group plan without fear of cancellation of your policy at its expiration date should one or a series of claims be paid in your community renders its dependability invaluable. The writer has personal knowledge of the uncertainty which has been experienced through cancellation by a well known company of all its risks in a certain locality in this state purely because of an adverse court decision or two, and which claims were settled by the company in question without consent of all concerned because of the insignificant sums rendered in judgment. The company in question considered such judgment a victory when compared to the amount sued for, entirely ignoring the moral effect upon those who would prey upon the doctors' pocketbook. Under our present plan it may well be repeated that no such unfortunate circumstance can arise until all legal methods have been exhausted and the case carried to court of last resort.

In order that the reader may easily differentiate, attention is directed to the following table of cardinal features which ought to convince the most skeptical:

INDIVIDUAL	VS.	GROUP
1. Separability.		1. Unity.
2. Diversity.		2. Solidarity.
3. Complexity.		3. Simplicity.
4. Promiscuity.		4. Selectivity.
5. Instability.		5. Stability.
6. Penuriousness.		6. Liberality.
7. Uncertainty.		7. Dependability.

Knowing that every wide awake doctor has some sort of protection it might now be apropos to say that any member of the association who desires to avail himself of this insurance may do so by communicating that fact to the secretary of the state association or any representative of the United States Fidelity and Guaranty Company and on the contrary if he does not so desire, neither is his standing in the association nor his membership affected thereby.

—C. A. Selby, Chairman Insurance Committee.

GROUP INSURANCE POST SCRIPT

In addition to the editorial note in last month's Journal concerning group insurance, the United States Fidelity and Guarantee Company has agreed to make a flat charge of $20.00 per year to all members. This includes x-ray specialists, radium users, graduate assistants, technicians and anesthetists. Formerly an increased charge for this group was made, as stated in the company's September ad in the Journal. This uniform rate has been decided on since the ad appeared.

—R. B. Adams, Sec.

HONOR SYSTEM IN MEDICAL PRACTICE

Ray Lyman Wilbur, Stanford University, Calif. (*Journal A. M. A.*, Aug. 20, 1927), states that in the development of an honor system there must be some method by which the older members can bring in the new members on a proper basis. The greatest advances come where there is a well organized profession. There is no one method by which this organized profession can inculcate proper attitudes on the part of younger members except by the powerful effect of example. There is no real way of lecturing medical ethics into people. Adequate and practical instruction in the business of medical practice and in the technic of handling the daily problems of practice is needed to save time and avoid waste motion for the beginner. He should know just what his proper relations are to the dentist, druggist, nurse, public health authorities and constituted authority. Effective and daily associations with men who are living up to the honor code offer the best method of getting results. One of the things that such an honor code can provide is the smooth working of daily contacts and methods for handling and regulating abuses when things do not go well. Procedure forms will differ with different years. There will always be a question as to what is the truth in many fields of medicine. We have passed out of the period of the infallibility of certain authorities. Things that are tabu today are the ordinary procedure of tomorrow. While at the present time there are certain bogies, such as birth control and state medicine, with which we can frighten a good many members of the profession, there are enough men of training and sound thought to grind away on these problems and within the principles of ethics work out wise procedures. Medical men must view each other as friends, not as rivals. They must think of each other as devoted to a common cause and under common handicaps. Physicians must learn to discount properly the statements made by patients about fellow physicians, and to recognize the inevitable human tendency to place emphasis unduly on points favorable to a preferred point of view. There are always a few places where it is difficult to make the code fit when it is viewed on too technical a basis. There is much talk of the absurdities of medical ethics on the part of individuals who do not understand the life of the profession. It is hard for them to see that in the long run it is only by sound ethical procedure that the welfare of the patient is properly protected. If he is made the plaything of prejudice and is to be the subject of contest between members of the profession, it is inevitable that his best interests will suffer. We have to remember that time and skill are all that a physician has to offer, that he needs protection of his time and the opportunity to use his skill, and must not consume his energy in misunderstandings. With a steady accession of new information it is well to keep the middle course in regard to the great stream of discoveries and cures constantly arising. The medical profession has had a long and persistent struggle with superstition, not only in the profession itself but also among the public. The constant endeavor to find useful truth and put it to practical purposes in the relief of the sick is the mainspring of the profession. It always has the look ahead. Its ideals stand out in the lives of its great leaders. In the muck of human failure and weakness, its vision leads upward to a greater spread of human happiness.

Joshaway Crabapple says: "A dentist is the only man in the world who can tell a woman when to open or shut her mouth and get away with it."

EDITORIAL PARAGRAPHS

Enrollment in the country's eight medical schools has increased fifty per cent in eight years.

After all, Nebraska earth roads in wet weather are not so bad—not after trying the Iowa gumbo in the rainy season.

Infantile paralysis prevailed in various sections of this country during the late summer and fall. In Alberta, Canada, 11 deaths occurred in three weeks.

Arthur Brisbane, noted editor and columnist, believes in and features Voronoff and his monkey gland rejuvenation. That is probably because old age is creeping on.

Liquor prescriptions must be filled within three days, says a new prohibition bureau regulation from Washington—just as if filling were likely to be overlooked.

Now then, it appears that statistics prove that suicide is more common among the unmarried than among the married which would seem to indicate that there are worse things than being henpecked.

The editor long since learned that the busiest men in the profession have the most time to do for others and for organized medicine. When you beg to be excused, pleading a pressure of work, you are most likely "kidding" yourself.

The American College of Surgeons is sponsoring a movement for the creation of the Ochsner Foundation and looks to the medical profession and to laymen for generous support of the movement to get one million dollars for the foundation.

Physicians are occasionally consulted about the backward or unusual children, particularly with reference to their educational training. It may be well to bear in mind in this connection the Trowbridge Training School advertised in this Journal.

Two years ago the board of health of Sioux City featured a campaign to eradicate diphtheria by immunizing 19,000 children with the result that the mortality was reduced at first to two deaths in a hundred thousand and it is hoped to reduce it to nil.

Again the bureau of vital statistics finds it necessary to complain through the secular press about the negligence of some physicians in reporting births. It is well to remember that a fine of from $10 to $100 or sixty days in jail may be imposed on the transgressor.

All physicians should attend medical society meetings; but if all physicians attended all the medical society meetings there would be none left to care for the suffering—and when would physicians earn their living since of medical society meetings there seems no end?

A return to the age of reason is evident in the propaganda now spreading to repeal all speed laws and hold drivers responsible for their misdeeds. The smaller and more unimportant the village the lower the speed limit, for which there is neither rhyme or reason. Nobody can comply with present speed laws. No, the writer has not been arrested.

We have it from Hegner, *Colorado Medicine,* that William Henry Harrison, one time president of the United States, was educated for a physician, but later entered the army as an officer of the line. He, however, retained an interest in medicine and was instrumental in securing the enactment of medical laws.

The medical profession has been greatly honored in the selection, by the Board of Governors, of Dr. W. O. Bridges, as King of Aksarben. In the activities for the upbuilding of Omaha the medical profession has always had a prominent part and this tardy recognition is a very handsome compliment to the profession and to the individual. Your Majesty, we salute!

A correspondent of the *Virginia Medical Monthly* for September calls attention to the fact that ephedra and ephedrine are not new pharmacals; that they are mentioned in Dorland's Medical Dictionary edition of 1911, in Merk's Index for 1907, in Shoemaker's Materia Medica for 1901, all of which is interesting, but does not detract from the value of the remedy, which has a distinct place in the therapeutics of today.

A few lines from the medical history of the Lewis and Clarke expedition up the Missouri and down the Columbia rivers in 1804-05 may prove interesting, since it has a near-local color. The only death on the expedition was that of Charles Floyd, August 20, 1804. The death occurred on a little stream now known as the Floyd river near the outskirts of Sioux City, Iowa, and the spot is marked by an imposing shaft known as the Floyd Monument. The notes from the diary follow: "He (Floyd) was seized yesterday with a bilious colic and all our care and attention was ineffectual to relieve him".

ORGANIZED MEDICINE AND "THE GREAT AMERICAN MEDICAL TRUST"*

I want to tell you something about organized medicine. Most, if not all of you have heard about "The Great American Medical Trust", a term sometimes applied in derision to the American Medical Association. I want to tell you something about the American Medical Association. The American Medical Association was organized in 1847, its principal aim being to elevate the standard of medical education. It must be remembered that for many years medical education was on a low plane in the United States. The country was new and growing rapidly. There was demand for physicians in the newer sections. The laws of the several states were not uniform in their requirements for entrance to medical colleges not for graduation. No national law can under our democratic form of government, and the rights of states, cover the requirements for licensure—that belongs to the police powers of the several states. The earlier system of medical education provided for three years of study under a preceptor, including two courses of lectures at medical college. Up to about 1880, a course of lectures in a medical college consisted variously of from 20 to 24 weeks—a very few of the better colleges requiring 28 to 30 weeks' attendance. The courses consisted mostly of lectures—there was very little laboratory or hospital work. It was under this system that some of us received our medical training such as it was, and yet there are those of us who are willing to admit that under that old system they made some pretty good ones!

The Journal of the American Medical Association was established in 1883, and near the close of the last Century had about 8,000 readers. On the death in the late nineties of the late Colonel John B. Hamilton, then editor, the trustees of the American Medical, cast about for a physician as editor, one suitable to further the interests of the great American Medical Association and of the Journal. Here is where a bit of Nebraska local-color enters the history of the association. Dr. George H. Simmons, of Lincoln, then a struggling physician who had acquired some reputation as a medical journalist by the establishment of the Western Medical Review, applied for the position and after taking a few night lessons at the Lincoln State Journal office in the problems of editing and publishing, went to Chicago for a conference with the board of trustees. He was selected as editor and held the position until two years ago when he was retired on a pension. He saw the circulation of the Journal increase from 8,000 to 90,000 copies weekly. For twelve years he was also secretary of the American Medical Association.

Dr. Simmons had a vision which resulted in the reorganization of the American Medical Association on the unit basis. The county society is the unit and those admitted to membership in the county society, by that act became members of the State and national organizations.

Dr. Simmons had a theory that since no national law could regulate the medical colleges of the several states that pitiless publicity would do so. He gathered about him a group of similarly minded physicians and as a result a Council on Medical Education was established. A survey of all the medical colleges of the United State was made—a survey made by consent, sometimes grudgingly given—and the results were published in the Journal of the American Medical Association. The combined influence of publicity and the persuasion of the council resulted in succeeding years in fusion of some colleges with resulting stronger faculties and better facilities as well as in some colleges closing their doors. Where twenty-five years ago there were 200 medical colleges in the United States there are now but 80, all standardized and almost without exception of double A standard.

A Council on Pharmacy and Chemistry also was established which examines all new remedies offered to the medical profession and if the claims are not sustained the same pitiless publicity informs the medical profession through the Journal. More recently a Council on Physiotherapy was established which examines apparatus offered for physical therapy.

The aims of the American Medical Association are altogether altruistic. I think I have said enough to convince you so that if ever you again hear anything about the "Great American Medical Trust" you will know the facts.

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*Notes of an off-hand talk given before the Norfolk (Nebr.) Rotary Club, Sept. 13, 1927.

THE OMAHA-DOUGLAS COUNTY AUXILIARY

The Auxiliary of the Omaha-Douglas County Medical Society was organized at a meeting held in the auditorium of the Medical Arts Building, April 21, 1927. Officers and committees are as follows:

President, Mrs. A. P. Overgaard; Honorary Vice President, Mrs. Frank Conlin; Vice President, Mrs. H. C. Sumney; Sec'y-Treas., Mrs. A. F. Tyler; Directors, Mrs. W. L. Shearer, Mrs. G. E. Neuhaus, Mrs. John Allen, Mrs. A. S. Pinto.

Membership Committee: Mrs. C. W. Pollard, Mrs. J. J. Keegan, Mrs. A. O. Peterson, Mrs. F. J. Schlier, Mrs. F. W. Heagey.

Publicity: Mrs. Clarence Rubendall, Mrs. A. J. Brown, Mrs. Glen D. Whitcomb, Mrs. Elizabeth Swab, Mrs. W. H. Loechner.

Hygeia: Mrs. Adolph Sachs, Mrs. W. H. Pruner, Mrs. Claude T. Uren, Mrs. Chester H. Waters, Mrs. Clyde Moore.

Activities: Mrs. G. W. Dishong, Mrs. H. Von W. Schulte, Mrs. Paul H. Ellis, Mrs. H. B. Hamilton, Mrs. G. Alexander Young.

Courtesies: Mrs. Rudolph Rix, Mrs. A. C. Stokes, Mrs. Rodney W. Bliss, Mrs. J. E. Pulver, Mrs. H. C. Miller.

The auxiliary is a factor of the Needlework Guild and has offered its services in the diphtheria education program. Other constructive work will be undertaken during the winter.

AMERICAN COLLEGE OF SURGEONS, IOWA, SOUTH DAKOTA AND NEBRASKA SECTION, HOTEL MARTIN, SIOUX CITY, IOWA, NOVEMBER 14-15, 1927

Headquarters and registration at the Martin Hotel.

Clinics from 8:30 to 11:00 at the hospitals on the mornings of both days.

Clinical addresses from 11:30 a. m. to 12:30 p. m. at the Martin Hotel each day.

A Conference on the Problems of the Small Hospital from 10:00 a. m. to 12:00 noon on Monday, the 14th, at the Martin Hotel.

A Hospital Conference from 2:00 to 4:30 p. m. on Monday, the 14th, at the Martin Hotel.

A Meeting of the Fellows of the American College of Surgeons at 4:30 p. m. on Monday, the 14th, at the Martin Hotel.

A Dinner at 7:00 p. m. on Monday, the 14th, at the Martin Hotel.

A Hospital Round Table Conference from 9:00 to 11:00 a. m. on Tuesday, the 15th, at the Martin Hotel.

A Scientific Meeting from 2:00 to 4:30 p. m. on Tuesday, the 15th, at the Martin Hotel.

Demonstrations in Hospital Standardization at local hospitals from 2:00 to 4:00 p. m. on Tuesday, the 15th.

A Community Health Meeting at 8:00 p. m. on Tuesday, the 15th, at the High School.

THE SOCIETIES

The regular meeting of the **Lancaster County Medical Society** was held October 4, 1927, at the Orthopedic Hospital, Dr. E. W. Rowe in the chair. The minutes of the preceding meeting were read and approved. Dr. W. L. Curtis presented three very interesting clinical cases, the first that of a male aged 40 years who presented himself July 1, 1927, with the complaint that he had a foreign body in his eye. Examination revealed the fact that the patient was a diphtheria carrier and that his eye condition was the result of direct diphtheric infection of the eye. This infection was in all probability due to a transfer of diphtheria bacillus from the patient's own throat, while at the same time he manifested no throat trouble and consequently raised the question of local immunity. The second case was that of a man aged 54 years who presented himself, September 9, 1927, with the statement that he had his left eye penetrated by a stick some twenty years previous with accompanying obstruction of sight at that time. The eye was giving serious recurrent trouble. Evisceration was advised and instituted. While this operation was being performed the operator encountered a hard substance in the posterior one-half of the sclera. Examination proved this to be a bone fragment. There is no evidence of malignancy. The above findings are of a rare nature.

The third case was that of a woman aged 27 years who was seen in consultation August 8, 1927 and was acutely ill. The diagnosis of tracheo-bronchial diphtheria was established and a tracheaotomy was done with relief of the obstructive breathing. Antitoxin was rigorously administered but with no avail, the patient dying a few days later from toxemia. An autopsy was performed and the trachea-bronchi membrane recovered. The specimen presented is unusual. The membrane reached to the point where the main bronchi branch to the lobes of the lungs except for the lower left branch, wherein there is a cast of the entire bronchial tree and to the broncheoles down to the air cells. The case emphasizes the importance of early diagnosis in all cases of throat trouble and the virtue of starting large doses of antitoxin early when there is doubt.

In the papers of the evening Dr. Miles J. Breuer presented a paper entitled "Child Nutrition Work in the Lincoln Public Schools". This paper was accompanied by lantern slides illustrating the various types of mal-nourished children and their progressive charts.

The board of education has long recognized that there are numerous children in the schools whose physical conditions and constitutions are such that they are unable to carry the same burden of studies that the normal child carries; yet they must have an education. Likewise, training in the acquirement and maintenance of health is fully as important a subject in the school curriculum as arithmetic and grammar.

The so-called nutrition classes take care of a particular type of child; one who is able to carry the ordinary schoolwork, with all extras trimmed off, and whose condition is almost normal physically; who at most has a few readily correctable defects, and whose chief defect is in the matter of living habits and home care. Therefore, the nutrition class, though under the management of doctors and nurses, is more a pedagogical matter than a medical one.

Children with more serious defects are taken care of in the "open-window" rooms, where fresh-air, daylight, diet, rest, and a specially arranged study program are the main features of the work.

The nutrition work is carried on under the supervision of Miss Mae Chamberlain, a specialized nurse, who has had training for the work in special clinics in the east. She attends to the organization and the essential details of the work. The instruction is given by physicians. Dr. R. B. Adams, Dr. Miles J. Breuer, and Dr. E. W. Hancock have been prominent in the nutrition classes as instructors for several years.

For the past four years, about eighty children have been taken care of each year. About one-third of these have been brought to the normal standard condition of health and weight. From 96 to 99 per cent have received benefit of one kind and another. A large percentage, the exact number not being known, have continued their improvement for some years after leaving the class. Those who are observing and correlating the school and play activities of the children, and their physical conditions, are thoroughly convinced that underweight is a serious matter. Underweight means malnourishment, and malnourishment is always caused by something, which, if not removed, threatens more serious results.

In the second paper of the evening Dr. E. S. Wegner read a paper entitled "Diabetes in Children".

The purpose of the paper was, to review recent literature and case records for outstanding facts and theories, also to point out differences in diabetes as it manifests itself in children. The most important points covered were:

1. The absolute necessity of keeping diabetic children sugar free to avoid further damage to the pancreas.

2. The influence of infection in (a) probably causing damage to pancreas (b) making diabetes more severe.

3. Greater care necessary in administration of insulin because of unstable metabolic equilibrium in children.

4. Probable influence of other glands of internal secretion in diabetes.

5 Complications often seen in adults rare in children.

—Arbor D. Munger.

The **Saline County Medical Society** held its third quarterly meeting at Wilber, Tuesday, Sept. 13th, and was called to order by the president, Dr. F. J. Stejskal, at 8 p. m.

Dr. Czar Johnson, of Lincoln, read a most excellent and exhaustive paper on "Backache", covering the subject from A to Z in a lucid manner. Dr. R. C. Kirchman, of Wilber, gave a very instructive paper on "Diagnosis of Acute, Non-Traumatic Lesions of the Abdomen". Dr. T. F. McCarthy, of Lincoln, read a paper on "Three Types of Gastric Ulcer and the Treatment for Each". These excellent papers were all received and discussed at great length by nearly all of those present, and everyone expressed himself as being highly entertained and thought the time was profitably spent.

—H. W. Quirk, Sec.

The **Furnas and Harlan County Medical Societies** met in Oxford for a joint meeting, to discuss particularly the recent outbreak of infantile paralysis in Harlan county. Following was the program: "Recent Outbreak of Poliomyelitis in Harlan County", Dr. W. C. Bartlett, Alma; "A Short Review on X-ray Therapy", Dr. L. W. Rork, Hastings; "Physiotherapy", Dr. Don L. Smith, Wilsonville; "Health Examinations, Ways and Means of Introduction", Dr. Rork. The proceedings closed with a banquet at the Burlington Hotel.

The **Otoe County Medical Society** met at the Frontier hotel, Nebraska City, September 12. Dr. Frank Conlin, Omaha, spoke on "Glycosuria in Hyperthyroidism", and Dr. Earl C. Sage on "Diagnosis of Sterility in the Female". Twenty members were present.

The **Madison "Four Counties" Medical Society** meeting for September was held at the Horst Hotel, Madison, on the evening of the 20th. Fifty-four physicians and dentists and their wives partook of the dinner. Dr. C. W. Pollard, Omaha, spoke on "Toxemia of Pregnancy" and Dr. A. S. Pinto, health commissioner of Omaha, gave an address on the "Anti-Diphtheria Campaign". Both addresses were well received and were distinctively instructive.

The October meeting was held at Pierce on the evening of the 18th. Forty attended the dinner. Dr. Clyde A. Roeder, Omaha, was the speaker of the evening. He spoke on the Anatomy and Physiology of the Gastro-intestinal Tract".

The **Ninth Councilor District Medical Society** was held at Grand Island, October 11, thiry-nine physicians attending. The program follows:

"Diabetes in Children", Dr. H. B. Morton, of Doniphan; "Foot Complaints", Dr. Eugene Clark, of Burwell; "Brain Tumors", Drs. L. M. Stearns and F. F. Jester, of Kearney; "Bronchoscopy", Dr. E. E. Linn, of this city.

Fifty-two were at the banquet served at the hospital at 6:30 p. m., and among them were the wives of a number of local doctors. Dr. James E. M. Thomson, of Lincoln, gave a lecture on "European Travels to Medical Centers", supplementing it with motion pictures he took abroad. Dr. Earle Johnson, of this city, later discussed Dr. Thomson's lecture and his own European trips.

HUMAN INTEREST TALES

Hendley, Nebraska, is at present without physician or drug store.

Dr. B. A. Root, York, is in Chicago, attending children's clinics.

Dr. J. W. Duncan, Omaha, has gone to Vienna for a period of study.

Dr. Thos. L. Doher, formerly of Wilsonville, has located at Bayard.

Dr. Austin H. Smith, formerly of Murdock, has located at Imperial.

Dr. J. S. Winston, Lodge Pole, has disposed of his office equipment to Dr. E. P. Murdock.

Dr. C. E. Novak, Humboldt, and Miss Ruth Boyd, DuBois, were married September 14th.

Dr. Ralph S. Russell of Omaha, has located at Sutherland in succession to Dr. Heider.

Dr. and Mrs. Edwin Davis, Omaha, spent several weeks at the Lake of the Woods, fishing.

Dr. A. G. Lueschen, Columbus, attended postgraduate work on the eye in Chicago, during October.

Dr. J. R. Blackman, for a number of years with Dr. A. F. Tyler, Omaha, has located at Los Angeles.

Dr. Henry Farrell of Kearney will hereafter devote himself exclusively to eye, ear, nose and throat work.

Dr. J. A. Henske, Omaha, attended the Central States Pediatric society meeting at Cleveland last month.

Dr. N. B. Fall, for several years in practice at Madrid, has located at Winfield, Kansas, where he has hospital contact.

Dr. and Mrs. H. M. Hepperlin, Beatrice, visited relatives in Pennsylvania before attending the clinical congress at Detroit.

Dr. Palmer Findley, Omaha, was elected president of the American Society of Obstetricians at the recent meeting at Asheville, N. C.

Dr. D. B. Ashley, New York surgeon, visited Peru and other Nebraska points recently. Dr. Ashley attended the Peru State Normal School forty years ago.

A healer named V. F. Kucera, from Cheyenne county, has been arrested, charged with practicing medicine without a license. He claims to be a "Samaritan healer".

Dr. Charles B. Edwards, for some years in practice at Overton, has disposed of his holdings in that place and gone to Chicago to take postgraduate work in surgery.

Before the American Hospital Association meeting at Minneapolis last month, Dr. Victor E. Levine of Creighton Medical College, read a paper on "Diet in Heart Disease."

The offices and good will of Dr. E. J. Gillespie, Fullerton, have been taken over by Drs. Fogarty and Cleary. Dr. Gillespie will seek a new location and devote himself to children's diseases.

Dr. L. L. Davidson, University hospital, editor of the Clinico-Pathological Conference reports appearing in this Journal, has been alarmingly ill from gastric ulcer, but is slowly recovering.

The names of the newly elected executive committee of St. Catharine's hospital, Omaha, follows: Dr. Leroy Crummer, president; Dr. W. P. Wherry, vice president; Dr. Frank N. Conlin, secretary.

Dr. W. L. Dayton, Lincoln, enjoyed a two months' vacation spent at Northport, Mich., and attended the meeting of the American Academy of Ophthalmologists at Detroit, before returning home in September.

Dr. Stuart H. Cook, son of Dr. A. E. Cook of Randolph, and Miss Myrtle Jensen of Omaha, were married the early part of October in Pittsburg, at which place the doctor is an interne in Alleghany General hospital.

There are good prospects for a Lutheran hospital, costing about $180,000, at Fremont. The Dodge County Medical society, the Fremont Chamber of Commerce and the Lutheran church are intent upon the consumation of the project.

Dr. W. J. Galbraith, Inglewood, Calif., for 20 years an Omaha surgeon, former chief surgeon Union Pacific railroad, and professor of surgery, Creighton University College of Medicine, visited in Omaha recently. He left Omaha in 1901.

Dr. J. J. Keegan, Dean, Nebraska University College of Medicine, attended the annual meeting of the American Hospital Association at Minneapolis in mid-October and then went to Boston to attend the annual meeting of the Association of American Medical Colleges, appearing on the programs at both meetings.

Dr. F. P. Dorsey, Jr., son of Dr. F. P. Dorsey, Hartington, who graduated from Northwestern Medical School, Chicago, this spring, and is now serving an internship at St. Vincent's Hospital, Cleveland, was recently elected to the Cleveland Academy of Medicine.

NECROLOGY

Moses T. Zellers, Hooper, Nebr.; Western Reserve University School of Medicine, 1889; general practitioner at Hooper from time of graduation until about ten years ago, since which time, owing to increasing deafness he devoted himself to eye, ear, nose and throat work; member of the Nebraska legislature in 1889; consistent member of the Nebraska State Medical Association for upward of thirty years; an outstanding man in the activities of his community; died September 23, 1927, of organic heart disease, aged about 67 years.

Adelbert Townsend, Minatare, Nebr.; Rush Medical College, 1896; for a short period in practice at Beatrice, but for many years a practitioner at Minatare; member Nebraska State Medical Association; died as a result of an auto accident, September 18, 1927, aged about 56 years.

Guy B. Cross, Dewitt, Nebr.; Creighton University College of Medicine, 1904; practitioner at Dewitt for a number of years, succeeding his father who was one of the early physicians in that section of country, died suddenly, on the night of September 30th, 1927, aged fifty years.

Andrew J. Edstrom, Stromsburg, Nebr.; Creighton University College of Medicine, 1915; member, Nebraska State Medical Association; died as a result of an automobile accident, August 23, 1927, aged about forty-nine years.

William L. Crosby, San Pedro, Calif.; Rush Medical College, 1895; for almost thirty years a beloved practitioner at Beemer, Nebr.; member Nebraska State Medical Association; resident of San Pedro, Calif., for less than a year; died at the latter place, October 6, of organic heart disease, aged about sixty-one years.

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THE NEW SURGERY OF NEW GROWTHS

JOHN E. SUMMERS, M. D.,
Omaha, Nebr.

Progressive students have been learning to use surgical diathermy for some years, although it has had a rather up-hill climb and its acceptance in practice has been handicapped because of the rather seemingly exaggerated claims made for its sister modality, medical diathermy. Up until comparatively recent times the methods of apparent exploitation of physiotherapy apparatus had caused careful men to be "doubtful Thomases" of the many claims of the enthusiastic workers in the field of electrotherapeutics. Now, every up-to-date physician and surgeon should know what is going on in electrotherapeutics so that he may personally or by reference, give his clientele the benefit of this advanced knowledge.

The use of the mono-polar high frequency current of diathermy as a surgical effort in the removal by direct dessication or destruction of relatively superficial growths and the bi-polar current which, without carbonization, coagulates the tissues and seals vessels and lymphatics, while sterilizing the area treated and destroying all malignant cells, was introduced into practice by Dr. W. L. Clark of Philadelphia. Dr. George A. Wyeth, of New York,* says that in reality what we know of surgical diathermy is the result of Doctor Clark's continuous efforts in that direction.

Besides the rather common knowledge of surgical diathermy, a new element has come into use for operating surgeons, and for the availability of the method in this country and the development of the technique, we have to thank Dr. Wyeth himself. In the Foreword of Doctor Wyeth's book, written by the distinguished Baltimore gynecologist-surgeon, Howard A. Kelly, he says, "And now there appears upon the scene yet another improvement to confound all prognostications, a new principle of great value which bids fair to effect an extensive readjustment of our whole surgical technique". Doctor Kelly then goes on to say that by the use of the cold needle rapid electrocoagulation of the tissues can be secured without carbonization, which occurs when the galvanocautery, the hot iron, etc., are used. By another method the cold needle can be made to take the place of the knife in very many of its uses, particularly in the removal of malignant growths, more especially those involving the head, jaws, face, tongue, and floor of the mouth. It cuts the tissues, the skin, muscle, etc., falling apart, and the lymphatics and smaller blood vessels are sealed in the wound surface which it divides.

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*Surgery of Neoplastic Diseases by Electro-Thermic Methods.

Malignant cells which may have been squeezed into the wound, are thus prevented from being carried further into the general or lymphatic circulation. This cutting method we owe to Doctor Wyeth in this country, but he says Bordier of Paris and Kowarschik of Vienna, in 1921-1922, had written about a clean cutting form of diathermy, the knife being a simple needle which, when drawn across the tissues causes them to fall apart as if split with a knife.

It may be wiser in many instances when practicable, first by bipolar coagulating diathermy, to circumscribe a local growth, coagulate the tissues and seal all vessels and lymphatics beyond the borders of the growth, thus assuring the destruction of any marginal malignant cells not detectable by sight or palpation. This I will explain more fully in describing the technique for the removal of a cancer of the lip and tongue.

The endotherm knife, so-called radio knife, can be used in carrying out almost any cutting or dissecting operation, and in instances of malignancy it has a positive advantage, viz., it cuts and seals the divided tissues. The edges of the wounds repair by primary union as do those made by a knife. There is an added advantage, ligation of divided vessels is not necessary. It is said that any of the blood vessels, even one as large as the *femoral,* may be occluded by a technique of diathermy, yet I know those ordinarily divided in an amputation of the breast may be so treated and safely.

If the forceps in whose jaws a divided blood vessel is held is lifted up free from the surface, and its shank touched by the cutting needle switched to the coagulating current, the blood vessel tissue held in the jaws of the forceps immediately coagulates and the clamp is removed; there is no bleeding.

In illustration of what I have just written, I recently presented a woman before the Staff of the University Hospital whose breast I had removed for cancer, by means of the Endotherm Radio Knife. A simple needle, in this instance one made of platinum, but in my opinion not so practical as a large cambric one, was employed. The involvement of the skin necessitated a wide removal, and extensive undermining was necessary in order to approximate the wound edges. This was accomplished under great tension, yet the repair was by primary union. A small area, about two inches, could not be covered over and was left to granulate. The type of operation done was a radical Halsted-Meyer.

In operating for cancer of the lip an early beginning growth can be easily outlined by one of experience, but in the neglected case where the growth is extensive and its borders are rather indefinite, the most experienced surgeon too often in operating with the knife believes he has cut through safe tissues beyond the borders of the growth; the fallacy of this is that often the growth returns *in situ.* We have found in the University Hospital where all such removed specimens are studied, that a few cancer cells are sometimes found in the cut borders of the removed growths. These findings are not exclusively in specimens removed by the less experienced operators.

Should such growths be blocked off properly by the bipolar current that seals the vessels and lymphatics, destroying all malignant cells and then the mass removed by the cutting current, allowing the wound to heal by granulation, the deformity, whatever resulting, can be overcome in great degree or completely, by plastic surgery. The involved lymphatic glands after those enlarged simply because of the inflammation and infection of the ulcerated malignant growth have subsided, should be removed by a wide, if necessary, block dissection. Not a simple tinkering too often attempted by those not at home in the surgery of the neck.

Cancer of the Tongue: Cancer ranks in frequency about as follows: Gastro-intestinal, breast, uterus, tongue. The mortality of cancer of the tongue is about 85%. The reason being delay in the proper taking care of early small ulceration caused by bad teeth, perhaps by the irritation of tobacco, or even by neglected Leuitic infection. Bloodgood states that since the country-wide appeals for the early removal of all ulcers or growths of the tongue or mouth in their incipiency, those that do not disappear within a few weeks under common sense treatment, that the number of cases of cancer of the tongue presenting themselves at the Johns Hopkins Hospital has decreased fifty per cent. Bloodgood removes all such growths with the galvano cautery. When a cancer of the tongue is removed by the Endotherm Radio Needle there is no hemorrhage. In some of my earlier operations for cancer of the tongue I have done a preliminary tracheotomy and packed the pharynx as a preliminary procedure to prevent the entrance of blood into the trachea before beginning an extensive removal of the tongue, say by the Whitehead technique. Now such a procedure should seldom be called for. As W. H. Schmidt* recently said, with the endotherm needle blood and lymph spaces are immediately sealed, preventing extension of the infection. As in the method given for removal of extensive cancer of the lip the tissues near the border of the growth which may harbor cancer cells are destroyed.

The terrible pain which *always* accompanies cancer of the tongue subsides immediately after operation by the method advocated. The slough is cast off within ten days, leaving a healthy healing granulating surface.

I have personally operated with just such experiences as described, with the most happy results. There is a subject that comes into my mind of some importance. When the slough occurs there may be a hemorrhage and I imagine it does occur in very rare instances. Of course, this can be prevented or controlled. By prevention a tumor or ulcer occupying one side of the tongue near its tip would scarcely need any consideration as to late hemorrhage; it could be so easily handled locally. Growths situated farther back might have disturbing hemorrhages unless in the hands of a man of resourceful ability. In growths occupying the anterior one-half or one-third of the tongue hemorrhage could be prevented by tying the lingual artery as a preliminary procedure. When a greater portion of the tongue, and perhaps with it most of the floor of the mouth also, is involved, in such instances both external carotids should be tied as a preliminary protective measure. These arteries are easy of ligation, much more so than the ligation of the lingual artery alone. Chloroform and gas may be used, and ether, of course, for operations away from the mouth. Anesthesia should preferably be by the rectal method so well described by Gwathmey, and recently given in detail in one of the weekly Bulletins of the Staff Meetings of the Mayo Clinic. In the operative work of this clinic, devoted to the head and neck, the methods I have advocated are being employed with increasing frequency.

Any incision or dissection can be made by the endotherm knife. When suspicious tumors of the breast are removed for examination, of course, the needle is preferable to the knife; the danger of spreading the tumor should it prove malignant, is negative; and there may not be the urgency for the frozen section examination. The removal of apparently localized tumors from any quarter, particularly from the breasts of young women, should have the advantage of the endotherm knife. It is supposedly understood that any operation that can be done under local anesthesia by usual methods, can also be done by electrothermic methods.

Without question an advance in the surgery of malignant diseases is being brought about by electrothermic methods.

Some tumors of the brain are irremovable, or dangerously removable, because of the fear of hemorrhage. By electrothermic methods this danger can be minimized, and I understand that one of the best known eastern brain surgeons is now, by this technique, removing tumors which he formerly declined to remove because of their vascularity.

We will never reach the goal, however, until the cause of cancer is discovered and its treatment by mutilating procedures is done away with. I personally am a firm believer in its parasitic origin.

THE DIAGNOSIS OF PARANASAL SINUS CONDITIONS BY DIRECT INSPECTION**

H. B. LEMERE, M. D.,
Omaha, Nebr.

The diagnosis of sinus conditions depends upon terms of pathology. If, as in some European clinics, no sinus is considered infected except when it contains thick, white, opaque pus, then the condition is one which can, usually, be diagnosed by a careful observation of the nasal fossae, and by x-ray or transillumination.

---

*J. A. M. A., October 15, 1927.

**Read before the annual meeting, Nebraska State Medical Association.

The pus will be seen, with the aid of the head mirror, to be coming from under the anterior end of the middle turbinate, high up in frontal sinus conditions, and lower in antrum or anterior ethmoid disease. After the turbinates are shrunk, if pus is coming from the sphenoid, or posterior ethmoid, it may be seen coming from above the middle turbinate, drifting down. The naso-pharyngoscope will show the posterior drift, which is sometimes the only visible evidence of the discharge from the antrum and posterior sinuses, the contour of the middle fossa precluding, at times, a view of the stream by ordinary nasal examination.

Acute empyemas, with retention, also offer little difficulty in the way of diagnosis, especially if the x-ray is used. The pain resulting from the acute conditions, however, seems, often, to come from a negative pressure in some sinus, other than the infected one, and probably results from a swelling of the osteum, preventing access of the external atmospheric pressure. For instance, an acute empyema of the antrum may be free from pain in the cheek, with severe pain over the frontal sinus on examination, with the x-ray showing no evidence of infection. This pain is often spoken of as a referred pain, but it is better explained, I think, by the vacuum formed in the frontal, by a closure of the lower portion of the infundibulum, due to the swelling in the hiatus semilunaris from the flow of pus from the antrum. This negative pressure in the frontal, produces congestion, and, often, throbbing pain.

The diagnoses of chronic, thick pus and of acute empyema, both present very definite evidence of partial or complete pus retention. A knowledge of anatomy and an appreciation of the meaning of densities in the x-ray negative, will, ordinarily, be sufficient to make a diagnosis. Such a diagnosis is often made, in general medicine, from the x-ray and from the subjective symptoms. This has lead to a doubt, on the part of men in general medicine, as to whether infection of the nasal sinuses can exist if they do not show the clear-cut symptoms of the conditions just mentioned.

The questions arise (1) Is this kind of a diagnosis adequate? (2) Are there infections in the sinuses in which pain, catarrhal secretion, and pronounced x-ray findings may all be absent, and yet a focal infection be present?

Yates, by means of injection of indigo-carmine solution into the different sinuses, has been able to trace the pathway of the secretions in the nose and pharynx. The experiments were as follows:

Indigo-carmine was dusted into the nose and was seen to be adherent to the mucus. The action of the ciliated epithelium seemed to roll the mucus round and round, enveloping the foreign material and removing it. Indigo-carmine solution was injected into the normal antrum, and it appeared in the naso-pharynx in two minutes. A definite course of the drainage stream could be followed by means of the dye. From the ostium of the sinus, the fluid seemed to follow a definite path. Flowing backward, in the middle meatus, it took a course downward, behind the eustachian tube, continuing down the side of the pharynx and appearing in the oropharynx, at the side of the pharynx, and behind the posterior pillar of the tonsil. Part of the stream was diverted over the tonsil, but the main stream continued and, at the level of the dorsum of the tongue, divided into a larger and smaller portion. The smaller portion reached the lingual tonsil and the region of the epiglottis, while the larger portion proceeded downward to the junction of the posterior larynx and the pharynx. Ultimately, the mucus, having reached these areas, was swallowed, but in one abnormal case, some of the mucus found its way into the trachea.

Solutions placed in the posterior ethmoids, took a course into the upper naso-pharynx and then flowed downward, both in front of an behind the eustachian tubes, joining below with the stream from the antra. That from the sphenoid spread over the pharynx and then, also, united with the main stream from the antrum. Thus all sinus drainage ultimately reached partly the tonsil and anterior larynx, but mainly the posterior larynx and commencement of the esophagus, and was then swallowed.

The ciliary action, in cases where there was infection of the sinuses, is somewhat different than the normal. When mucus or pus is present in any of the sinuses, the rapidity of the flow of the indigo-carmine may be greatly modified. In mucus or thick, gelatinous pus, the flow is only slightly altered, and the sinus contents are not stained by the indigo-carmine, the thick pus and the dye solution not mixing.

In cases where the sinus contents consisted of thin, green pus, the pus stained blue and the stained fluid was conveyed along the drainage tracks, sluggishly. In cases of sinus infection of the atrophic type, in which no pus was found within the sinus, but the secretion contained micro-organisms and debris, in some quantity, there was, sometimes, a complete stasis of the indigo-carmine within the sinus, and often part of the track was deeply stained for some hours.

In two cases, in which indigo-carmine was injected into an antrum, where this marked stasis was present, the dye appeared in the urine, in three quarters of an hour, while a similar quantity of indigo-carmine, taken by mouth, at a subsequent visit, did not appear in the urine.

Yates' clinical observations, in these experiments, were that cases, in which the mucus was unstained, showed only local symptoms. Those in which the mucus was stained, and the ciliary paralysis was partial, gave evidence of remote local symptoms, such as laryngitis. Cases in which the cilia were apparently paralyzed and the secretion of mucus was absent, and microorganisms were present, showed, in some cases, remote symptoms, such as arthritis, but in well marked cases of this type of sinus infection, with atrophy, signs of sinus infection, as revealed by the ordinary methods, were scanty.

Any pus, therefore, in these pathways, leads to a suspicion of nasal sinus disease. Lateral pharyngeal bands, behind the tonsillar fossae, are very suggestive of sinus drainage.

Direct inspection of a suspected sinus and a culture from the secretion, taken directly from the lining of the sinus, is the most certain way of determining low grade infection. This procedure is not possible as a routine, but the information gained is instructive. The following table shows seven, consecutive cases, examined by means of a trocar and naso-pharyngoscope.

The technique was, briefly, as follows: The anterior wall of the antrum was anesthetized, by the injection of 1% novocain in the buccal mucus membrane, over the canine fossa. The mucus membrane was sterilized by wiping, vigorously, with alcohol. A straight trocar was inserted through the canine fossa, and an applicator was used to obtain a culture from the walls of the antrum. The interior of the antrum was now examined by a small naso-pharyngoscope, inserted through the canula. All steps were guarded by the strictest asepsis.

Date	Patient	Clinical Findings	Findings in Antrum	Bact. Findings
6/21/24	**Mrs. L. M. H.** X-ray Find. R. A. 1+ L. A. ? Other sinuses clear	Had flu in 1918. Has not felt well since. Three months ago, had severe attack of bronchitis.	Chronic venous congestion. Normal openings present and patulous.	Staphlococcus— Micrococcus catarrhalis.
3/18/24	**Mrs. A. M.** X-ray Find. All sinuses—1½+ Sphenoids—cloudy.	Severe catarrh and sore throat. Later, infected arm.	Polypoid swelling. Openings large and patulous.	Staphlococcus.
6/30/24	**Mrs. F. J. J.**	Had infection of left antrum, several years ago. Lately run down.	Venous engorgement. Congested meatus. Globule of tenacious pus at bottom of antrum.	Green streptococcus.
6/7/24	**Mrs. A. K.** X-ray Find. L. A. 3+ Other sinuses 2+.	Severe headaches.	Polyp at outer inferior angle. Large artificial opening.	Green streptococcus.
6/2/24	**Mrs. C. W. P.**	History of left antrum infection.	Edematous wall. Natural opening.	Late growth staphlococcus.
6/14/24	**Miss A. C. M.** X-ray Find. Both antra—1½+ Other sinuses clear.	Growing deaf, with clinical signs of otosclerosis.	Pus sacs on superior wall of right antrum.	Staphlococcus.
6/9/24	**Mr. V. U. N.** X-ray Find. L. A. 1½+ R. A. ? Frontals & ethmoids—1+.	Running slight temperature. Does not sleep well. Nervous. Headaches.	Free ostium. Small white bodies with converging vessels.	Streptococcus. Friedlander's bacillus.

It would seem that we are being compelled to think of nasal pathology in terms of infection. Much of the disrepute of nasal sinus surgery comes from the fact that the end results of these infections, in the cardio vascular system, are already present, before the sinus infection is looked for, or recognized. Consequently, treatment of the primary focus is often ineffective in arresting or improving this end condition. Preventative medicine would indicate instruction in proper nasal hygiene, and appropriate observation in all chronic cases of catarrh and recurring colds, even if no general symptoms have yet presented themselves.

The correction of these low-grade infections is often a question of simple hygiene, and not always one of prolonged treatment or operation. But the simple hygiene occupies a place of considerable importance in forestalling the cardio vascular and nervous disturbances of later life.

If the rhinologist can eliminate and control, to some degree, infections of the nose and the para-nasal sinuses, he will be contributing his share to prolonging the expectancy of human life. The importance of this work and the inadequancy of our present methods, in meeting certain conditions, are a challenge, calling for cooperative work between the internist and the rhinologist.

DISCUSSION

W. L. ROSS, Sr., M. D., (Omaha): I wish to express my appreciation of this presentation which is so practical and given in such a way the general practitioners surely can derive a great benefit from it.

So often when the tonsil has been removed, still the patient's symptoms have not cleared up. If one is patient enough to examine the throat, as the doctor has indicated, he will see either a thin greyish or greenish secretion. It is very tenacious, clinging to the posterior pharynx. If the patient has just finished a meal, it will be swept away; but remaining is the red, inflamed condition of the tissues of the posterior walls of the tonsils and of the pharynx, and leading behind the soft palate is this continued red condition, with enlarged lymph nodules of the pharynx and side walls. It is my understanding when the lymph nodules are large enough to be seen by the naked eye, they are already infected.

In examining the throat or tonsils, you should be cognizant of the fact if you have the red condition in the absence of acute inflammation, it is evidence of infection of some of the sinuses. Added to this is the peculiar history the patients will give of having difficuty in clearing up the throat, generally in the morning, because as they lie over night this secretion gathers on the posterior pharyngeal wall because there is nothing to sweep it down and facilitate drainage into the esophagus or larynx. That history alone will often give a clue to the fact there is infection of the antrum. I think the case history and physical examination and what you can see are the most valuable adjuncts in making the diagnosis, plus, perhaps, a blood count. The peculiar odor from the person's breath also is indicative of these chronic catarrhal nasal conditions that exist for twenty-five years in many instances, feeding poisons into the system, not only through the alimentary tract, but oftentimes producing an annoying cough which it is impossible to relieve unless this infection is taken care of.

To be sure, if you have a lot of pus, the x-ray examination will show up an opaque condition; but suppose the antrum is well emptied, then the x-ray will show a shadow provided you are looking for it—if you know the shadow which a thickened mucous membrane will produce. In taking the x-ray films, if you happen to strike the sinus when well drained, you will get one degree of brilliancy providing the antrum is pretty well filled. Therein lies the difference between your reflected light in trying to make a diagnosis with it, which is of no particular value unless your antrum is already well filled; therefore, the x-ray is much more reliable.

I think the continued red condition of the mucous membrane shown by physical examination is of the greatest value. In addition, we find from the anterior pillar, extending over the arch of the palate, is a red streak in patients who have a little aggravating cough, or a peculiar taste. You will find the lingual tonsils presenting evidence of infection which continues clear to the other side. That is an important point to look for in examining the throat. Simply removing an infected tonsil does not clear up that condition. I have treated throats in which the tonsil had been removed, and yet we had the infected lymph nodes and this particular reddish streak from the lingual tonsil. I think the lingual tonsil is more often overlooked than the pharyngeal tonsil or the ordinary faucial tonsil.

I like the exposition given by the doctor of this drainage taking place over a vast area of mucous membrane, so that our constitutional symptoms are kept up after the tonsils are removed. Simple drainage does not clear up those antrums. I have known cases of five years' standing with double drainage, and still we have infection of the mucous membrane of the antrum. It has been my practice to treat those antrums with physiotherapy, both x-ray and carbon light and high-frequency diathermy. It is a long-drawn-out treatment required, but it does the work and frees the antrum of the infection.

EARL B. BROOKS, M. D., (Lincoln): There are two points the doctor mentioned I think are well stressed. We have all taken out tonsils and hoped this strip of red tissue would disappear. We are chagrined it did not. The doctor's explanation of why—that we want to treat the accessory sinuses—I think is well taken. We treat cases with intranasal punctures and drainage, and they are not well. The doctor's explanation of these cases where he found granular tissue on the walls of the sinus shows why they do not. We cannot cure those cases until we take a look in from in front and clean out those pathological conditions. Personally, I have tried using the nasal pharyngoscope in the antrum and did not accomplish the desired result. I think the trouble was with me, and I shall try again.

J. J. HOMPES, M. D., (Lincoln): I think this paper will be pertinent for the next fifty years because of the very exceeding difficulty in making a diagnosis of sinus disease. In a discussion of this subject before a medical society a few months ago an internist said, "We have x-ray and transillumination and local inspection, and we will make diagnosis of sinus disease where there is none, and miss when there is some."

It is a very difficult thing to be right all the time in any field of medicine, and I think probably sinus disease offers our greatest problem in diagnosis. It is a sure thing there is only one way to make an exact diagnosis, and that is by direct inspection. I think we have a perfect right to open the anterior wall and look in at anything that is necessary to make a diagnosis. The general surgeon has always felt justified in doing so in his practice. It is time we nose and throat men were claiming the same right for ouselves. It has always been our right, but we have decided we were a class of individuals who could not make an exploratory operation for a diagnosis. Dr. Lemere's paper has proven to the contrary. More exploratory punctures and operations are necessary if correct diagnoses are to be made.

There is another phase to this thing. One must consider there is general physiological traumatism attached to these sinuses. We can have an infected sinus and we can have sinus discharge and we can have rhinorrhea from general systemic disease. Because there is a little infection backed up in the sinus that is diagnosed by exploratory puncture or direct inspection does not mean it is chronic or confined to the one sinus examined. Certainly you are liable to have streptococcus infection in it. It is impossible to have a chronic, low-grade infection in one sinus alone. The general practitioner should know whether the patient has a gall-bladder or appendix which gives rise to chronic rhinorrhea and chronic superficial nasal infection. Otherwise patients will be operated where operations are not indicated.

HAROLD GIFFORD, M. D., (Omaha): I want to say a word about non-operative treatment. I happen to be the victim of a chronic sinusitis which I have had for some twenty years, which about once a month used to give me a severe headache. I would get through with it and dose myself up with one thing or another, and it would go along another month, and I would have another headache. The nose men I saw around my office and elsewhere did not think I had anything bad, but they admitted my headaches came from my sinus. I had not a purulent secretion, but I would snuff out a nice little oyster of dried secretion. This is a regular symptom of these cases. You get this oyster-like crust.

I began what many have begun—the only difference being I have kept it up—of using a salve locally just as part of the daily routine to try to keep this thing down. What I have done is simply to get one of the ordinary mixtures consisting of white vaseline, one ounce, and menthol camphor, one grain, and blow it up my nose every night and sometimes twice a day. If you have it in a drawer of your dresser, it takes only a minute, and there is no trick about it.

The result of this treatment has been when I would blow it up once a day, I would have no headaches at all for a period of five or six months. If I would blow it up twice a day, I would not have headaches at all. This is not the same thing as using a vaseline spray. The liquid does not do the work the solid does. Give it a little snuff. Don't snuff it clear through. It dissolves gradually and keeps the crust softened so that these sinuses will drain. In a good many cases you will avoid having to have a radical operation. If you have an antrum full of pus, clean it out and treat the membrane afterward. If your patient won't have one of those things, or if he is too old and feeble to permit the strain these operations produce on a feeble constitution, such treatment as this will in a good many cases fill the bill. He can keep himself in good shape.

Don't expect the patients to carry on the treatment if they have to pay fifty cents a week for a little tube of this salve. They will do it for a week or a month. Have them get half a pound or a pound of the stuff and have one of these vaseline guns and you will accomplish results you do not get with sprays. The oftener you use it in the daytime, the better the results will be.

DR. LEMERE, (closing the discussion on his paper): I have little to add with the exception I wish to thank the gentlemen who have taken part in the discussion.

On account of Dr. Gifford's prominence and the weight we always give to everything he says, I do wish to counteract the effect the remarks he made might have. We find many of our men are dying at the age of fifty to fifty-five. If they get over that period, they go to the seventies and eighties. It is a matter of resistance. Dr. Gifford has been particularly fortunate in having resistance to his infection. Everybody is not so fortunate. It is not wise to tell everybody who has pus infection coming chronically from his nose to treat it with the vaseline gun, because it won't be effective in a great many cases. If a grippe or flu infection be taken seriously at the beginning and efforts made with proper hygiene to prevent its becoming chronic and to promote drainage, in probably a large number of cases operation will not be necessary. Nasal hygiene should be taught the patient.

PULMONARY CYSTS*

H. J. LEHNHOFF, M. D.,
Lincoln,Nebraska.

I am not bringing this case, which I think is a cyst of the lung, with the idea of exhibiting any particular diagnostic acumen. I have two objects in exhibiting this case. The first is these cases are rather rare, and the second object is we must not be unmindful of the fact we can occasionally have more or less pathology, and yet have a condition which does not embarrass the individual to a great extent.

This is a boy seventeen years of age. His family history is negative. No scarlet fever or diphtheria. At three years he had a pneumonia with pleurisy on the left side, and was ill a week. He had rather severe pain in the upper area in which this shadow occurs. He had convulsions during the first year of his life, supposed to be due to a digestive disturbance. In the winter of 1925 he had a slight sinus trouble. That summer he had a middle ear infection, and a paracentesis was done. In March, 1926, he had tonsillitis for four days. He felt badly for some time afterwards. Later on he had some sinus trouble, mostly antrum, being treated by an associate in our office. This was decidedly acute.

At this time he had difficulty with his heart, endocardial and myocardial. I did not see him at that time. He was put to bed. His heart was very rapid. The infected sinuses were opened and drained, and cleared up very well. I saw him shortly after this, and in my mind there was no question that there existed still an acute infection of the heart. He not only had a systolic murmur but a characteristic diastolic, and all the signs of an endocardial infection. We kept him in bed most of the time until the latter part of July.

In June, a tonsillectomy was done. One tooth was removed in July. He did very well. We treated him for this heart lesion and we gradually got him up. He was walking a distance of from two to four miles each day. He looked healthy and rosy.

He went swimming at the municipal pool, and while in the water he was seized with rather an acute pain in the area of the left side, about in the region of the third rib. He spit a little blood. I thought he had overdone and that some blood came through. We put him back to bed and built him up gradually again. Occasionally he would spit a little bit of blood and have a few rales.

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*Dry Clinic given at annual meeting Nebraska State Medical Association, Lincoln, Nebr., May 10-12, 1927.

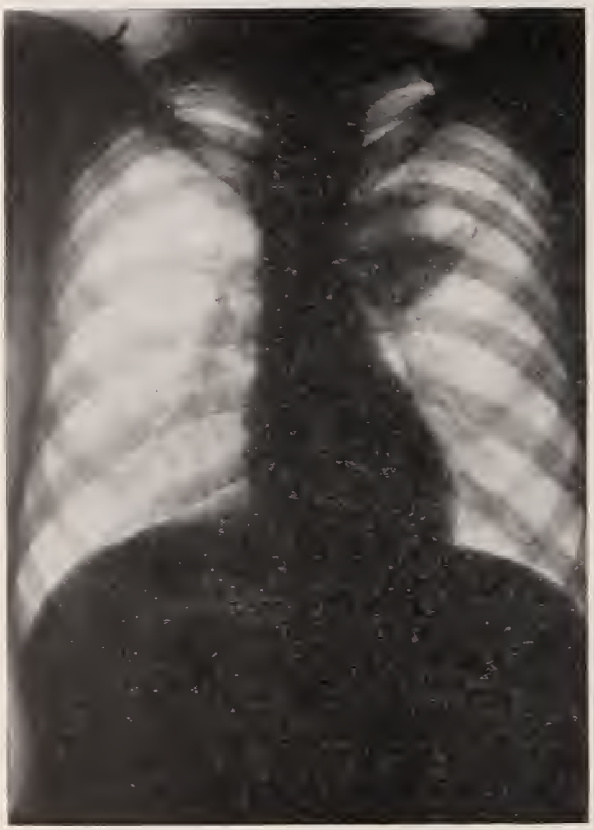

Fig. 1.

He went to Okoboji and went swimming again. One day he swam quite a little way and experienced a severe pain in this area. Again he began to spit up blood, and came back home. We put him to bed for a short time. He had some heart symptoms, but not very bad. You could hear a systolic murmur, and once in a while, a diastolic, and often a reduplicating second sound.

We let him go to school, having him stay on one floor and lying down when he was not reciting, keeping him there only one-half day at a time. He climbed one flight of stairs. One day he climbed two flights and had pain and spit some blood. They thought he raised some pus, too. When he had severe pain and raised blood, I thought of an infarct of the lung, although I had the theory the bleeding was from his circulatory system. When he spit this blood with pus, I thought, "The infarction is infected. We have an infected area there now."

We x-rayed his chest. We saw the shadow over to the left of the mediastinum under the second space and third rib. Our mind reverted to the tonsillectomy in July, done under local anesthesia. He came out of it well. So our first thought was he had an abscess, probably resulting from the tonsillectomy or from the sinusitis. We were quite disturbed over the affair. Yet the boy did not seem to be very sick. We watched him for a while and he did not develop temperature and had no leukocytes, and no symptoms except those of the heart, which were meager. You could hear a few moist rales in the area of the shadow. He kept doing better as far as his circulation was concerned.

We advised him to seek counsel elsewhere, so he was taken to Dr. Jackson. They bronchoscoped him. It did not reveal anything but a little puckering of the mucous membrane. In addition, they x-rayed him and found what we had found. In the meantime we had taken an x-ray about every month, and began to weaken on our idea of the abscess. The other things were not there. He ran no fever and had no sputum except occasionally a little blood. The material we thought was pus we were inclined to think was not pus—simply blood and a few epithelial cells.

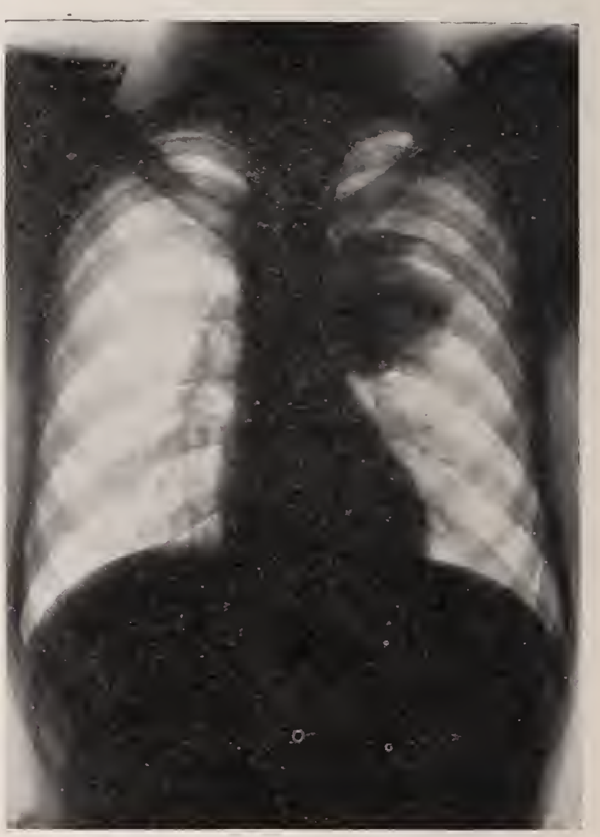

Fig. 2.

The boy kept getting better and went back to school. He would take walks of a mile or more and climb steps without difficulty. He only raised a little blood after exertion. The x-ray proved that as the months went on there was very little difference, in the shadow.

Long before this we changed our minds and concluded it was a cyst. After reporting back to Dr. Jackson, they practically concluded it was a cyst when they saw him in November. This outline is very distinct. There is no invasion into the tissues of the lung. The third point is this mass is not homogeneous. It is thicker in some places than others.

A cyst of the lung is a very rare affair, if we may throw out the cysts that result from infective granuloma. Look through pathology written in America and you see very few that mention cysts of the lung at all. If you look through German pathologies you see a few that speak of cysts of the lung. By cysts of the lung we usually have in mind a cyst that is a multiple affair, not unlike, in a gross way, cysts of the kidney which are practically all congenital. As a rule they are multiple things and not cysts of this kind.

In 1925, Dr. K., of Johns Hopkins, discovered at postmortem in a baby one of these multiple cysts of the lung. He reviewed all the literature he could find on cysts of the lung, which numbered one hundred and eight cases. Most of these were reported by Germans; a few by Frenchmen and Italians, and none by Americans. Since then there has been one more case reported in this country.

Let us take up the differential diagnosis. If this were a new growth, if malignant, it would change its form in those eighteen months. It has not changed at all as far as we can see. A growth not malignant might possibly remain dormant this long, but it would not have this picture. It would usually cause symptoms this boy does not have. An abscess I believe is out of the question. I think we were frightened into it in the beginning. It should show some signs of abscess—a cough, temperature, with leukocytosis, a definite beginning and a change in the character of the mass—and ordinarily there is involvement of some part of the adjacent tissue.

We had a cyst several years ago that disturbed the patient, not far from this location. We passed a needle into it. The other case was going down generally from something in there. This boy is getting stronger and the cyst does not trouble him except when he exerts too much. Shortly after he takes certain positions after exerting, he will raise a little blood. The blood he expectorated I do not think came from this mass. Dr. Rowe thinks the bronchus goes through the mass. Part, if not all, of the mass is behind the bronchus. I think he bled at this time because his circulation was depressed, and this mass was in definite relation with some of the return flow from the bronchi, and afterward he bled. It was the pressure of this mass, plus deficient circulation for the time.

I believe Dr. Neeley is inclined to think this cyst might have resulted from the pneumonia he had when three years of age. I am inclined to think the cyst was there at that time. The cyst was influenced by the inflammatory process in that area. These things are practically all congenital. There are many different theories for the particular cause of their formation, all of which are hypothetical and not settled upon.

I thank you.

DISEASES OF THE THYROID*

CLAYTON F. ANDREWS, M. D.,
Lincoln, Nebraska.

I want to take up disease of thyroids, especially goiters, and have an informal discussion if there is anything you want to ask. I am not going to give you a formal paper, but some thoughts I have been checking up and have had in my mind for the past year.

Unfortunately, I did not get to hear Dr. Roeder's talk on classification of disease of the thyroids. I have a classification that is simple, under which you can classify every disease of the thyroid. We all know from the literature we have read on goiters it is simply voluminous. We are at sea when we come to try to classify them along the old lines. This classification is simple. Everything will fall into it, and it is not hard to remember.

(1) Colloid, or simple endemic goiter.

(2) Adenomata.

(3) Exophthalmic, or Graves' disease.

(4) Inflammations, which include tuberculosis and syphilis.

(5) Malignancy, made up mostly of carcinoma.

(6) Acute thyroidism — cretinism — myxedema.

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*Dry Clinic given before the annual meeting Nebraska State Medical Association, Lincoln, Nebraska, May 12, 1927.

The colloid is the simple goiter of adolescence, mostly seen in girls from twelve to thirty. It is never surgical; never has an increased basal metabolic rate, and is a uniform, smooth, somewhat granular feeling goiter. It causes no symptoms unless it is the worry of the patient because of knowledge of the fact she has goiter. There is no real tremor. There may be some nervousness. There are no cardiac or vascular changes or nervous changes. It may become so large it causes a tracheal pressure which may lead to hoarseness. It usually disappears between the ages of twenty-five and thirty, or about that time, under treatment with iodine or thyroid gland. Do not operate on these goiters. It is not necessary unless they are so large you want to operate for cosmetic effects or because of pressure. The only pathology is the deposit of colloid with flattening of the epithelium, due to the pressure of the colloid material.

Adenomata are distinctly a new growth within the thyroid gland which causes compression and flattening of the epithelium. The adenoma is a disease of middle life. When the patients present themselves to you, they will do so around thirty-five to forty-five. They will give you a history of having had this goiter a number of years without symptoms. When they present themselves, the swelling is hard and nodular. A certain percentage become toxic, and that is the reason why we advise surgery for the simple adenomas—to operate before they become toxic. Do not operate too soon. They usually begin in early life and gradually grow. The best way is to wait until the patients are between twenty-five and thirty, and then take out the adenomata. You can do it safely before degenerative changes have taken place. Toxicity appears after the adenoma has been present about sixteen years, as a rule. In the toxic forms your changes are primarily cardiovascular.

The nervous symptoms in the exophthalmics are inclined to predominate in a large series of goiters. It may be difficult to differentiate between adenomas and exophthalmics, but physical examination with nodular swellings will differentiate them. The basal metabolic rate in exophthalmic goiters runs higher than in adenomata. On an average over a large series of cases, adenomas will show an increased metabolic rate of approximately plus 35; whereas exophthalmics will show a rate of approximately plus 55; so that you have a range on a large series of cases of an increase of 20 on exophthalmics over adenomata.

Very often adenomata will give pressure symptoms causing hoarseness and dyspnea and interference with respiration. They grow substernally and will cause trouble in that direction. They are prone to undergo cystic degeneration or hemorrhagic or calcareous. The latter gives the pearly, hard, stony feeling. The cystic goiters, where they are filled with gummatous fluid, gives that characteristic feeling to the goiter. We do not know the cause of these degenerations any more than we know the cause of adenomata.

In operating upon adenomata, your preparation of the patient is just as essential as in exophthalmic goiter. If the adenomata have caused symptoms for a great length of time, as a rule the myocardium is shot to pieces and patients have a tendency toward high blood pressure, although the pulse pressure is not increased in exophthalmic goiter. For that reason a great many cases require rest in bed, with an ice cap and a certain amount of digitalis before operation, even on adenomata. In connection with adenoma, do not use Lugol's solution or iodine. It is an entirely different affair from exophthalmic goiter, and while you prescribe Lugol's solution with exophthalmic goiters, you will increase the vascular disease if you use iodine in adenoma. Yet these adenomata should be removed as soon as seen after the age of twenty-five to thirty, because they grow gradually and cause pressure and are very prone to become toxic. It is our advice to anyone with definite adenoma to have it removed before these changes have taken place. If you do it before the myocardial changes have taken place, it can be done without high mortality.

In regard to exophthalmic goiter, it is hyperplasia of the lining of the acini of the thyroid. It is a constitutional disease—a combination of increased and abnormal thyroid secretion which increases metabolism. The average reading will be around plus 55. The symptoms you already know: Tremor; gastric crises, increased sweating and appetite, with loss of weight and palpitation and that sort of thing. When exophthalmics present themselves, there is a small percentage ready for immediate surgery. But almost every case of exophthalmic goiter will be better and get well quicker if you will take a few days to prepare the patient for the operation. Never operate upon an exophthalmic goiter that is in a crises or showing increased basal metabolic rate day by day. Wait until it has reached its peak and begun to decline, or until it reaches a standard level for a few days. In that way you can prevent a great many post-operative crises we used to see so often with unhappy results

Preparation for operation consists of rest in bed with an ice cap and Lugol's solution. The dosage will vary according to the severity of the case and the way it responds to it. Ordinarily we give ten drops once to three times a day for four to ten days prior to the operation.

In exophthalmic goiters digitalis is contraindicated. It is not a primary heart disease, and digitalis seems to do more harm than good. While we use it in adenomas, we do not in exophthalmics. We use Lugol's solution in exophthalmic goiters, but not in adenomas. After a few days under Lugol's and rest and forced fluids, you will find the pulse has dropped to normal. She will be sleeping for the first time in weeks, and her pulse will be regular and slower. The apprehension will be gone, and the appetite will be good. The patient will seem to enjoy her food more. Her strength will pick up and she will feel more comfortable. After you have the basal metabolic rate stationary, you can operate safely. The mortality in surgery of exophthalmic goiters in proper hands has been reduced to eight-tenths of one per cent, which is certainly very safe. The percentage of cures in exophthalmic runs around 80 to 85 per cent. Those are absolute cures. Of the other 15 per cent, 10 per cent are definitely improved. Some cases that have gone too far cannot be cured.

In adenomas the cure is higher than that—probably 85 to 90 per cent—with a benefit in an additional 5 or 6 per cent. The mortality in adenomas is 3 to 4 per cent, which is three or four times higher than in exophthalmic goiters. That was not true a few years ago, but the introduction of Lugol's solution has reduced the mortality of exophthalmics until this class of goiter has a lower mortality than the adenomas. That is the reason why I urge you to bring adenomas to operation earlier, rather than to let them go until cardiovascular changes have taken place.

The technical detail of surgery I do not care to go into. The main thing is careful hemostasis and avoiding injury to the recurrent laryngeal nerves. Put the patient on an inclined table with head up. Throw the head forward. Use the collar incision. If necessary, the sternomastoid muscles can be split and resewed at the end of the operation. Freeing the capsule is one of the important steps. Clamp your vessels before you cut to avoid hemorrhage and damage to the nerve. Pemberton has recently brought out this point in regard to the recurrent laryngeal nerve. We have looked upon it as following the inferior thyroid artery in a large number of cases. Pemberton seems to have shown that it follows along the wall of the trachea and he cautions against stripping the pre-tracheal fasciae too closely.

We remove three-fifths of the gland on each side, and also remove the isthmus. Upon completing the removal of the gland upon one side, it is well to have the patient come out of the anesthetic. We let the patient cough to make sure whether or not we have injured the laryngeal nerve on that side. If we have, we can be over-cautious on the other side, also to insure hemostasis.

You hear a great deal of talk about packing these exophthalmics and later closure. I cannot see the logic of that except in severe cases where you feel it is unsafe to go further. In a goiter in good condition, I can see no reason for doing one side at a time, or doing two sides and packing. The primary closure is superior to packing. I can see no reason for getting an ugly looking scar. I know of no one doing secondary closures except Crile, and he is doing it on very severe cases only.

After the operation, exophthalmic cases should be given four to six months to recuperate. For six weeks, give ten drops of Lugol once a day. After that, stop Lugol's and they get along nicely. In regard to using Lugol's without surgery, it is an erroneous idea that it is a cure for goiter. It has been shown there is no cure with Lugol's solution. It is merely a temporary palliative measure and a preparation for operation.

Attributing all symptoms of a nervous nature to an enlarged thyroid is to be condemned. Do not jump to that conclusion. We are very often misled, and there are needless operations on that account. Check up on your blood pressure and pulse and basal metabolic reading in all those cases. A great many people have a simple nontoxic goiter. Do not operate on every case with swelling of the neck because the patient shows a little nervousness. I think that is a very important point we have to watch.

On the other hand, do not be fooled in people who do not have a large thyroid. You see quite a number of cases with no palpable swelling of the thyroid; yet a careful check-up will show a definite thyroid toxicity.

"But if America has been demoralized by war, Europe, with its semi-feudalistic institutions and ideas, its concepts of clan and class, its castes, has experienced no less moral reaction and degeneracy. However, Europe had much less to work on. While its awakening of moral consciousness was previous to the discovery of America, its development in moral concepts and moral practice has been slow and retarded, in fact, marasmus."

METHODS AND RESULTS IN OSTEOMYELITIS*

H. WINNETT ORR, M. D.,
Lincoln, Nebraska.

For some years past we have been impressed with the point that many of the bad results that we have in bone and joint infections and many of the delays we have in the healing of such wounds, result from two principal causes. First—either the infected area is inadequately drained in the first place, or second—inflammation is kept up by the addition of secondary and mixed infection at the time of operation or at the time of subsequent dressings.

I became particularly impressed with these points during the war. In the Military hospitals a great variety of operative procedures and antiseptic dressings were employed. The most elaborate was, of course, in connection with the attempts that were made to carry out the Carrel-Dakin technique. I became convinced that most of these post-operative antiseptic dressings, instead of relieving the patient, actually caused so much irritation and added so much infection that healing was delayed rather than helped and that instead of cleaning up the wound and assisting the healing process the dressings and their attendant disturbance often delayed healing and impaired the result.

From the standpoint of an orthopedic surgeon who is greatly concerned with fixation in correct position for injured extremities I objected to the frequent dressings and disturbance caused by elaborate methods of post-operative antiseptic dressings. Casts are commonly not used in this class of cases because they interfere with the employment of the quantities of solutions and the frequency of dressings necessary. It is, of course, my opinion that immobilization in correct position is the thing that is really all important.

With these points in mind we have worked out a scheme of primary operation and secondary immobilization and protection of the wound which to a large extent does away with all of these antiseptic methods. In other words, we treat osteomyelitis or primary bone and joint wounds by means of primary asepsis or antisepsis when necessary, sterile dressings, immobilization in correct position and nothing else. We do not use frequent antiseptic dressings, sutures or drainage tubes except in the most unusual and difficult cases.

Our technique is not based upon any new principle in surgery but the methods employed and the manner in which they are employed give us a new combination of details in surgical technique. A patient with osteomyelitis for example, is operated upon so as to give a wide open drainage. His wound is carefully cleaned out, removing any dead bone if it is present, the wound is packed wide open without sutures or drainage tubes, vaselin gauze is used as a pack, then the wound is covered and an adequate immobilizing cast is put on and no dressings are done whatever. The patient is more comfortable, there are very rarely secondary infections of any kind and there is a tremendous saving in labor, dressing materials, etc.

At this point some one is sure to ask "what becomes of all the discharge after operation?" As a matter of fact there is no discharge. The thing that makes discharge as pointed out by Lister many years ago, is irritation, either mechanical or chemical. If the wound is dressed in the manner I describe and let alone there will be no discharge and the dressing can be removed at the end of three, four or six weeks and the wound will be found in better condition than if dressed daily. Occasionally there is some odor and it is, of course, permissible to change the dressing, especially the outside one, if necessary, but the vaselin pack should not be disturbed and the position of the limb should be carefully maintained.

I have here a series of slides which will give you some idea as to the technique of the method. (Some of the illustrations to which these slides refer were published in *Surgery, Gynecology and Obstetrics*—the October, 1927, issue—where they can be seen. and for that reason they are not being used for illustrating the report of this clinic in *The Nebraska State Medical Journal*). The illustrations in the first case are of a man who came to the hospital because of a fracture of the femur. An operation had been done and a Lane Plate inserted, infection supervened and secondary operation had to be done both to remove the plate and to reduce the fracture. This wound was packed wide open with vaselin gauze. It was somewhat slow in healing, dressings were only done at intervals of from two to four weeks and good consolidation was obtained with the limb full length and no deformity. We have used gauze sterilized in the vaselin so that it is thoroughly penetrated for packing of these wounds; Dr. F. J. Gaenslen of Milwaukee who has employed this technique in a good many cases has used the vaselin without gauze and has been extremely successful.

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*Dry Clinic given before annual meeting Nebraska State Medical Association, Lincoln, May 10-12, 1927.

It has been some years since we used a drainage tube in this kind of a case. It seems that in such cases drainage tubes should be done away with for good. When a tube is depended upon for drainage it is always inadequate. No suture should be employed as such wounds should be packed wide open and no areas of infection covered up. Large openings down to the bottom of the infected area are essential and the most efficient immobilization possible should be employed. In children (or in any patient) that are difficult to manage, for infection of the leg or thigh I recommend a double spica plaster of Paris cast. In a more easily managed patient less extensive splinting will sometimes be sufficient. In infection of the upper arm or shoulder a body cast including the arm is necessary. Careful attention must be paid to the fixation of the part in the most favorable position for function after healing has occurred.

When these casts are put on over such dressings no window is to be cut in the cast. The patient should be let alone; if he remains normal, with normal temperature and no severe pain or swelling, the cast should be undisturbed. Such dressings are usually done in from four to six weeks.

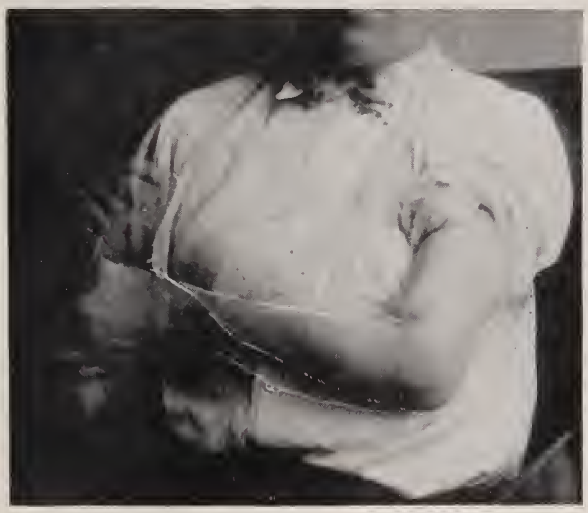

Fig. 1.

The next patient shown in the lantern slides had a compound, comminuted fracture of both legs. He was put in a double plaster spica cast with skeletal traction applied to both heels. He was dressed at infrequent intervals and healed up after a few months. His injuries were extremely severe and now he presents a rather unsatisfactory picture in the x-ray. However, he now walks fairly well with straight legs of equal length and all his osteomyelitis is soundly healed.

The next patient illustrated is a boy from Kansas with a fracture of the humerus. He had had three or four operations before I saw him. In the last operation the fragments were wired together, but infection supervened and he presented himself to me with the wire and a good sized sequestrum still in his arm. He had quite a severe general infection, temperature of 103°. The wire and sequestrum were removed, the wound packed open, a body cast including the arm put on and he was kept immobilized for about three months. Not only did the osteomyelitis heal but he secured a union of the fracture as well.

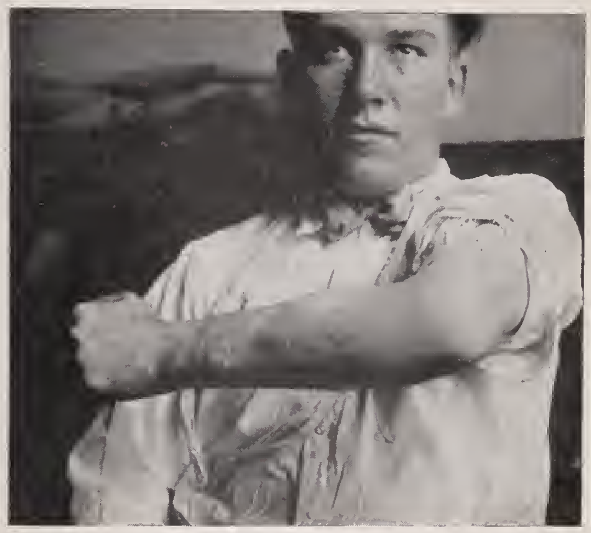

Fig. 2.

With the permission of *Surgery, Gynecology and Obstetrics* I am including these two pictures in this article as they are most instructive. He made an excellent recovery from a very severe condition.

The last slides are those of a young woman who had compound fractures of both femurs. I was called to the hospital at midnight and a double amputation of the thigh was suggested. I thought we could save her limbs and in fact we succeeded in doing so. She was young and robust and in spite of the extremely severe injuries she was put up in the manner I have described in the double spica cast and the effort was made to save both extremities.

She was in a plaster cast for about five months. Dressings were done as infrequently as possible, no postoperative antiseptic methods were used whatever. She is now walking about and going to school; her legs are fairly straight.

There is partial ankylosis of one knee. We feel that this case is an excellent illustrations of what may be accomplished by the simpler method of dealing with these compound fractures.

The last slide shown is that of a boy who had acute osteomyelitis. Many of the men with whom I have discussed this method have expressed astonishment over the fact that acute infections may be dealt with in this way. This boy was operated upon by my associate, Dr. Thomson. He had a temperature of 104° on the fifth day with acute osteomyelitis of the lower end of the femur. At the time of operation an opening was made in the lower end and into the medulla of the femur; pus was found. The wound was packed open with vaselin gauze, a double plaster of Paris spica put on, no drainage tubes or sutures were employed. One dressing was done after the operation in six weeks and another at the end of ten weeks. At the time of the second dressing he was found to be healed. This is the same experience that we usually have in treating these cases.

I should like to have you bear this technique in mind in dealing with infections of the hand and fingers. In case of a felon open down through the periosteum, pack the wound with vaselin gauze, put the hand in a sling and do no dressings. The patient will recover promptly without pain or complications and you will have a better finger than when you treat by poultices or wet dressings. I should like to have a number of you try this method and let me hear from you as to the results.

FRACTURES OF THE HIP*

DR. CARL KAIL, M. D.,
Lincoln, Nebraska.

There has been a great deal written on the subject of fractures of the hip. But most surgeons I find make the same prognosis no matter where the fracture is located; whether through the neck or through the trochanters; it is just a fractured hip to them. I wish to present the subject from an x-ray man's point of view. I make no claim to being an orthopedic surgeon, but I do have the opportunity of seeing a good number of these cases, of observing the manner in which they are treated and of following them through and noting the end results; and I thought it might be interesting and possibly instructive to check up on a series of cases.

The material for these remarks has been taken from the records and reports of St. Elizabeth's hospital and my files at the office. I collected films and reports on 130 fractured hips; 40 per cent of them occurred in males and 60 per cent in females. There were about an equal number of fractures through neck and through the trochanters. But, of fractures through the neck, slightly more than 17 per cent were in the male while over 82 per cent were in the female.

Of inter-trochanteric fractures 41 per cent in female and 59 per cent in male. Their ages range from 47 to 92 years.

There is a marked difference in the report of results. A majority of men report from 2 to 5 per cent of bony union in fractures through the neck. Doctor Campbell of Memphis reports 75 per cent bony union, and 90 per cent functional, of fractures of neck of femur. I would be rather skeptical of that report. Possibly he does not classify such fractures the same as other very good men. It does not seem to be logical there would be that much difference in a man's treatment of fractures of the neck of the femur.

Any trivial injury of the hip, no matter if the patient can move the leg around and there is no shortening, should be x-rayed. You get one of these injuries and no displacement, but later you get absorption, and somebody else discovers the patient has a fractured hip. They should be checked up with the x-ray for position, although the x-ray does not show up much callus in a fracture of the neck. In a bony union of fracture through neck you cannot see a great deal of callus as you can in a fracture through the trochanter.

In every fracture through the trochanters there was a good bony union. They always unite. I have never seen one that did not. There is usually some distortion, and a great deal of callus, but a serviceable hip. These fractures unite within a short time and it is poor management to keep these patients in splints or casts for months as I have seen done. They can be walking within 3 months. Of course, it is advisable to check up with the x-ray to note the amount of bony union. It doesn't seem to make any difference whether they are put in cast, splints or the old Buck's extension, they unite any way. Of course, the better the position, the better function.

The management of a fracture through the neck is an entirely different matter. We seldom get a bony union and if we do it is usually after there has been an absorption of the neck.

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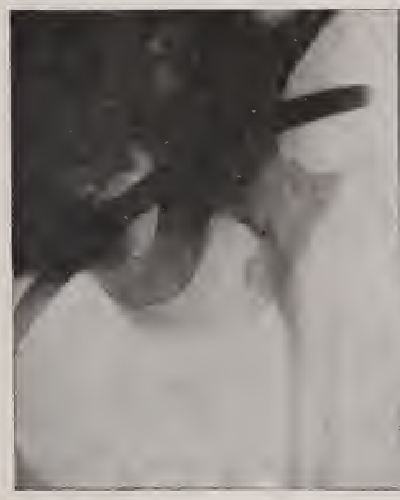
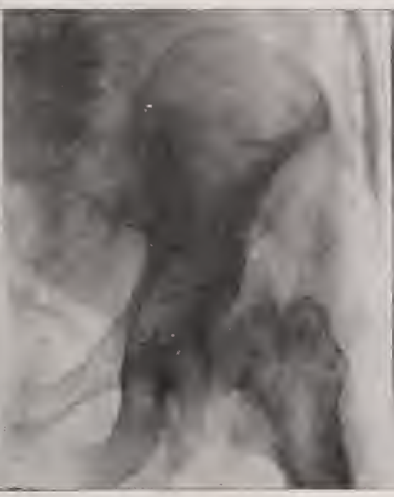
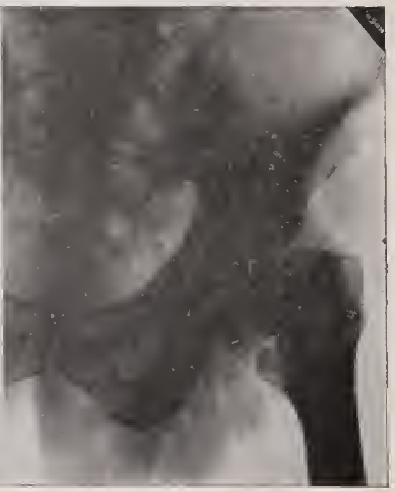
*Dry Clinic given before Nebraska State Medical Association, annual meeting, Lincoln, Nebr., May 10-12, 1927.

A fracture through the neck, even if it is barely visable and there is no displacement, whether impacted or not, disturbs the blood supply and an absorption of the neck takes place. This doesn't happen in a short time but gradually for weeks or months, so you can readily see the necessity of keeping these hips immobilized for a considerable length of time.


Case No. 1. First picture.


Case No. 1. Second picture.


Case No. 1. Third picture.

The head never absorbs because it gets its blood supply through the ligamentum-teres. Years after a fracture through the neck with no bony union, and the neck entirely gone, the head is still intact.

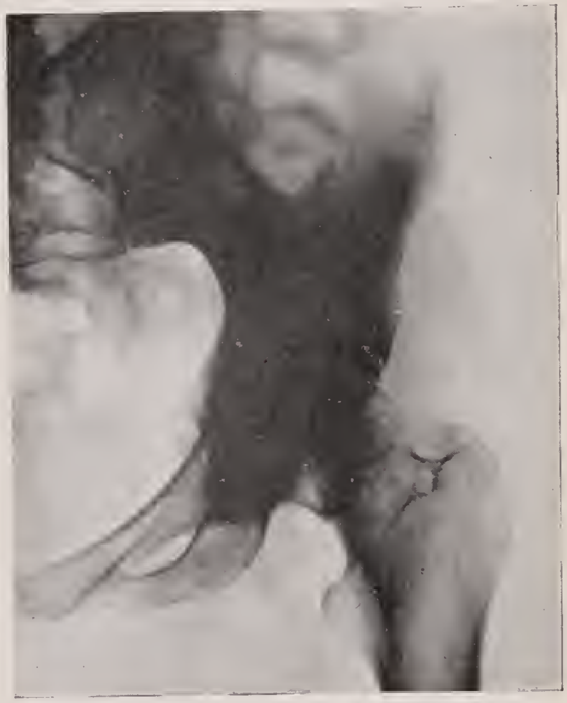
We hear the remark quite often, why I have a patient so and so who had a fracture through the neck and she has been walking all around; of course, she limps a little, but she gets around. Ninety-nine chances out of 100 she has no bony union, only a ligamentous union, and fairly good function. I have a few cases to present to illustrate the point I have intended to bring out in this talk:

One reason we do not get union in many cases is because we take the splints or cast off too soon. In a majority where we get union, we get it after our absorption; consequently we should keep the hip immobilized until after that time, and give Nature a chance to get a union.

This patient was in hospital for months with hip immobilized. X-ray pictures taken every one or two weeks. Note the excellent position of the fragments after reduction. They were held in that position for weeks. Note the gradual absorption of the neck and shortening of limb. This patient has no bony union almost two years after.

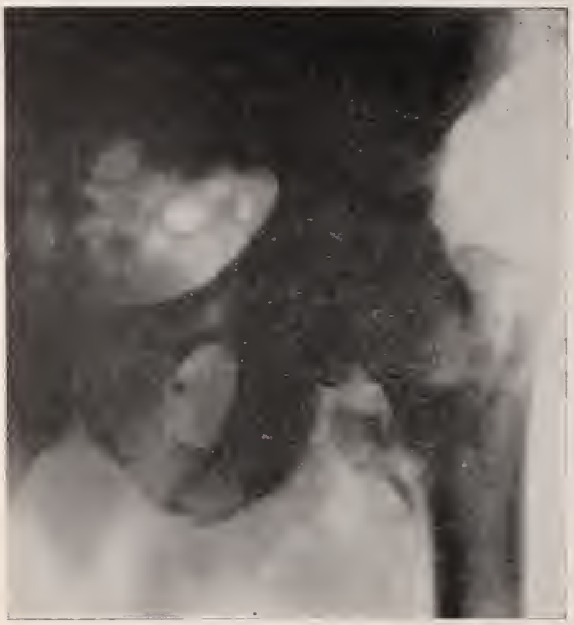
This shows a later case of fracture through the neck, with very little displacement. I think we are getting union.

There have been all kinds of treatment proposed for these hips. We used to be taught never to break up an impaction. A good many good men are advocating breaking up every impaction of the hip. It certainly would be folly to disturb a hip in this position, because it could not be improved. You would be apt to get your position a great deal worse.

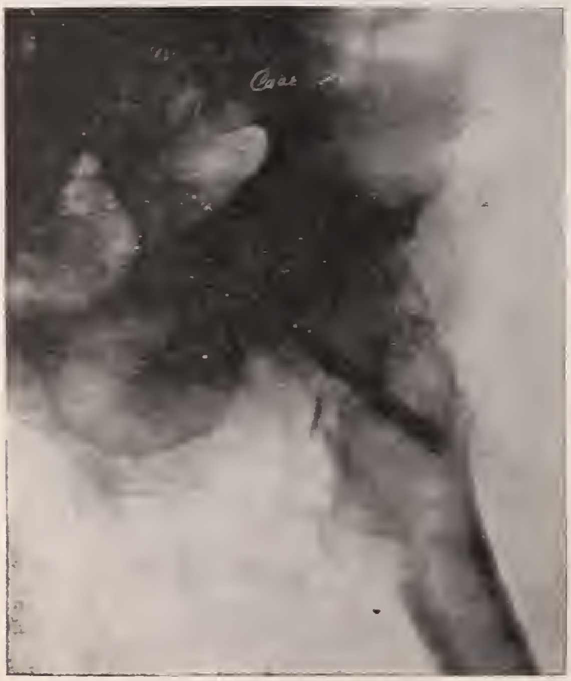

Case No. II. Through neck.

This shows a fracture through the trochanter.

With those hips having a fracture in that region, it does not make a great deal of difference as far as union is concerned what sort of cast or splint is used, because you will get union. Of course, the more perfect your position, the better function. They are pretty much comminuted. The lesser trochanter is torn loose sometimes an inch from the shaft; yet it will unite, although you get a great real of callus.

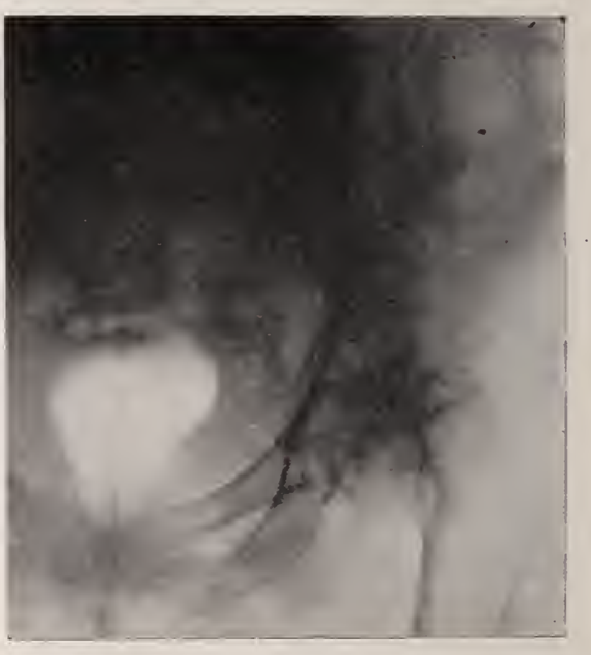


Case No. III. Intertrochanteric.



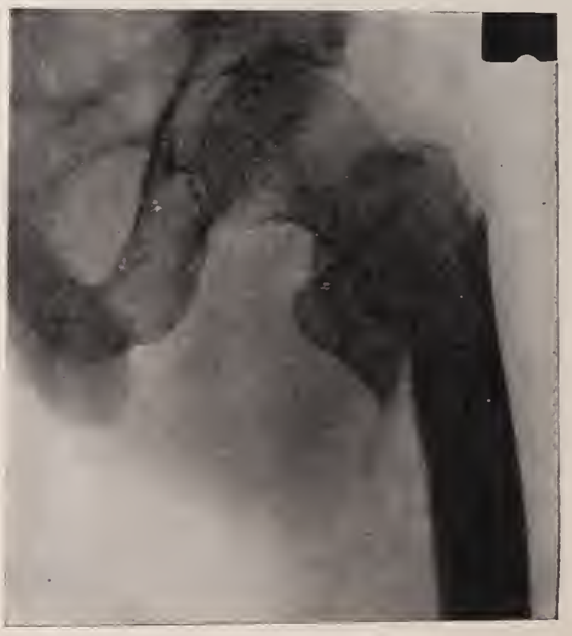
Case No. IV. Fracture of neck treated with bone peg.

This picture shows union of the lesser trochanter and good bony union of the hip taken after the man was walking around. There is no necessity of keeping intert-rochanteric fractures in a cast for months and months as we do a fracture through the neck of the femur. These unite usually within three or four months.



Case No. V. Ununited fracture of neck.

This is a fracture through the neck with considerable absorption. This man evidently had an impacted fracture of the neck of the femur, because he walked around for three weeks



Case No. VI. Intertrochanteric.

before he came to the doctor. We found absorption of most of the neck of the femur. It illustrates what I mentioned a few moments ago—that every trivial injury of the hip should be x-rayed; otherwise we will pass up an impacted fracture without displacement, and later we get an absorption of the neck. This picture was taken two months after the injury.

Two or three years ago we advocated bone pegs quite a lot. We attempted to put in a bone peg in this case, and to immobilize the fracture. After you have your absorption of the neck a bone peg possibly is indicated. To put in a bone peg immediately after one of these fractures only tends to hold the fragments apart. If it is put into the femur and you get absorption of the neck following, of course, your fragments can't get together. It prevents union.

This patient has no bony union, she is unable to walk. Picture taken 4 years after accident. Note the head of humerus is intact. This is about the appearance we get in a ligamentous union.

This is another type of intertrochanteric fracture. The lesser trochanter is separated.

What I want to bring out in these pictures is that the cast or splint in a fracture of the neck of the femur is usually removed too soon. It is more important to have treatment several months afterwards than it is at the time of the fracture because in a majority of these cases we get absorption of the neck of the femur and the union takes place after the absorption. A fracture through the trochanter will always unite. Sometimes there is distortion or shortening, but still the patient has a serviceable hip.

THE RECENT OUTBREAK OF POLIOMYELITIS IN HARLAN COUNTY*

W. C. BARTLETT, M. D., COUNTY PHYSICIAN, HARLAN COUNTY,
Alma, Nebraska.

The first case of poliomyelitis in this outbreak was called to our attention on August 18th, in a family residing about seven or eight miles west of Ragan. They were attended by a doctor from Holdrege and the first case in this family was seen by my assistant, Dr. Rider, who confirmed the diagnosis. Two other children in this family later contracted the disease and two of these children have remaining paralysis.

September 2nd, I was called to Ragan by Dr. Rogers and saw three cases with him.

Case No. 4—A girl age 4 had one leg paralyzed. The acute stage was over as she had been sick about six days.

Case 5—A boy 2½ years of age with his throat paralyzed. This patient died three or four days later.

Case 6—A girl 3 or 4 years of age in which the diagnosis was in doubt but as this child had considerable limp in the left leg I believe she had been a victim of the disease.

The next case (No. 7) was in Alma and was diagnosed by Dr. Rider, September 9th, in a girl 2½ years of age. This child had the right arm entirely paralyzed and the left arm partly paralyzed.

Case No. 8 was a young man near Ragan. He was 19 years of age and he was almost entirely paralyzed.

By this time the public was justly alarmed and during my absence on September 13th, the county board of health, on the advice of the county board of supervisors, closed all schools and all public meetings where they had authority. On my return the next day I asked the State Bureau of Public Welfare to send out their epidemiologist to advise us in handling the situation.

The state sent Dr. Bartholomew of the U. S. Public Health Service out on the 15th and he went over the situation very carefully. He advised reopening the schools and the continuance of the quarantining of all known contacts and cases of the disease.

The next case (No. 9) was a farmer living near Ragan. He was 30 years of age and had one leg paralyzed.

Case No. 10—A girl one year of age. This case lived in Alma and was a cousin of the first case in Alma and a contact as near as I can learn. She had been sick a week but they did not call a physician until the left leg became paralyzed. There were quite a number of contacts including a cousin who soon became case No. 11.

Case No. 11 was 2 years of age and took sick, September 24th, with a moderate fever, considerable pain on moving and considerable nervous irritability. After six days he developed a very slight paralysis of the right shoulder. One would not suspect paralysis in this child even after a fairly careful examination for it is only when he holds his hands up to be taken that the paralysis in the right shoulder become noticeable.

No new cases have been reported since this one and we are hopeful the outbreak is over.

As to how this disease is spread, one cannot be certain. However, there was a sale at the farm home of the child mentioned as case No. 4 while this child was ill, before paralysis came on. There was a common drinking cup at the well and case No. 8 states that he drank from this cup during the sale and the case that died (a cousin of case No. 4) was at the sale also.

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*Read before a joint meeting of the Furnas and Harlan County Medical Societies at Oxford, Nebr., October 6th, 1927.

There was a family near Huntley who had a sick child . They took it to a physician once but after that it was not seen by a physician. This child developed no paralysis but relatives say it had some difficulty in talking for a while, though it was not hoarse. While this child was still acutely ill the mother brought it to her sister's home in Alma and a week later her sister's child became ill and developed paralysis (case No. 7). About a week after this, case No. 10, a probable contact to case No. 7, also a cousin, developed paralysis. Quite a number were contacts and all were put under quarantine, where known, but case No. 11 soon developed in another cousin so there seems no doubt that the spread of the disease in these families was by direct contact as they certainly had been thrown together.

The cause of the disease is unknown but is supposed to be a filterable virus.

There may be carriers but there is no practical way of detecting them.

Control by quarantine of all cases and suspected cases as well as all known contacts seems most effectual.

Isolation of the patient from the rest of the children in the family and allowing no common utensils or playthings, seems to prevent the spread in the family, as in the only family in which there has been more than one case, isolation was not practiced early.

Symptoms in the cases in Alma were moderate fever, sore throat, discharge from the nose, nervousness and sometimes vomiting, followed in two to six days by paralysis.

Many cases of the abortive type no doubt escape recognition but spinal puncture and a cell count in suspected cases should be done.

Treatment: Treat symptomatically during the acute stage as there is no specific treatment. Spray or swab the nose and throat with a 2% mercurochrome solution or with a 10% solution of peroxide which is claimed to work well. We prefer mercurochrome.

Keep the patient at rest for six weeks, then refer to an orthopedic surgeon or the State Orthopedic Hospital at Lincoln or to one of the Shriner hospitals if the paralysis does not appear to be improving satisfactorily.

No practical vaccine or serum has been developed to date.

NEBRASKA UNIVERSITY HOSPITAL

CLINICO-PATHOLOGICAL CONFERENCE

A. D. DUNN, M.D., INTERNIST, AND A. J. MILLER, M.D., PATHOLOGIST.
Edited by L. L. Davidson, M. D.

CASE NO. 21398. February 4, 1927.

A pale tractor mechanic of about 30 years of age was brought into the University Hospital by ambulance, November 19, 1926, complaining of:

Pain in the lower abdomen,
Intermittent bleeding from the nose and mouth,
Weakness,
Shortness of breath,
Difficulty in swallowing,
Bitter taste in mouth.

He was placed on the medical service of Drs. E. L. Bridges and Rodney Bliss.

ONSET AND DEVELOPMENT: He was supposed to have been in the World War and to have been discharged without disability. He was well until around June, 1926. At that time friends remarked about his color. He noted that he tired easily and that he had numbness of the hands which he attributed to gripping the tractor levers. His weight at this time was 180 pounds, his usual weight.

On a hot day in August a friend remarked about his color and advised him to quit work on the tractor and get into the shade. He did this saying that he felt all right, but a few minutes later a profuse hemorrhage from the nose and mouth started, lasting four hours, patient lapsing into unconsciousness. The following morning he complained of a bitter taste and soreness of the mouth and three days later went to a dentist to have some teeth taken out. The dentist refused because of the patient's pallor; but on the advice of a physician ten teeth were removed which drained pus. There was considerable hemorrhage at this time but he went back to work the next morning, working for a week apparently steady. At the end of the week he quit, consulted another dentist because of soreness of the mouth. This dentist refused to do anything because of the patient's color, and a physician put him in a hospital. The patient left against advice after three days and went back to work. Three days later he had a similar hemorrhage which lasted all night, leaving him weak and short of breath.

During the last twelve weeks he had had eight or ten spontaneous hemorrhages from the nose and mouth, lasting for irregular periods and keeping him in bed for the last ten weeks because of weakness. He had noticed increasing pallor, shortness of breath, dry hacking cough and weakness.

Three to four weeks ago he got out of bed and drove about 75 miles in a car. Two weeks ago he had a sudden stabbing pain in the region of the bladder when he raised up to urinate. This was followed by an extremely painful sore in the lower abdomen. There had been some indefinite pain over the precordium.

For the past two or three days his throat had become much more painful especially in the region of the left tonsil. He had had difficulty in speaking and swallowing. He was sent in by the American Legion.

PREVIOUS HISTORY: He had had severe sore throat for the last two or three winters which had kept him in bed three or four days with fever. His eyelids had been puffy at intervals during this time. He had noted some palpitation.

FAMILY HISTORY: Father died at 42 of heart trouble. Mother died at 40 of "locked bowels". His wife, children, four brothers and one sister, were living and well. There was no history of bleeders in the family.

PHYSICAL EXAMINATION: Temp. 100: P. 140: R. 32. A young man lay quietly in bed appearing weak, pale and apathetic. He showed dyspnoea on the slightest exertion. The absent eyelashes, the puffy lids and the yellow color made the patient look like one of the yellow race. There was obvious difficulty in swallowing because of the sore throat. There was no apparent loss of weight.

Head: There was no obstruction or tenderness of the ears. There was a blood clot on the right side of the nose. The gums were swollen and pus could be expressed from around the few remaining teeth as well as from the tooth sockets of the teeth removed. On the left tonsil there was a 1.5 cm. sloughing crater ulcer with an inflamed border. Posterior pharynx and the right tonsillar pillars were pale and edematous. The breath was fetid.

Neck: There was marked soreness and slight induration in the left submaxillary area. No glands were felt.

Chest: There was limited expansion because of diffuse pain over the entire chest. Percussion was impossible and auscultation difficult. No abnormal breath sounds were heard.

The apex impulse was in the 5th interspace just outside the midclavicular line and the heart did not appear enlarged. There was a soft systolic murmur heard at the apex. The first sound seemed normal. P2 was less than A2 and no murmurs were heard at the base.

Abdomen: The abdomen was moderately retracted and very tender, apparently hyperaesthetic. Just above the pubes there was a flat-topped and somewhat superficial black area of necrosis about 6 cm. in diameter. This was extremely painful to touch and there was a surprising lack of inflammation around it.

Extremities: Knee, biceps and triceps reflexes were present and active. Babinski and ankle clonus were absent.

LABORATORY: The blood count on entrance showed only 770,000 R. B. C's, a hemoglobin of 20 per cent, and a W. B. C. of 44,000. A stained smear corrected this count. There were 7,200 W. B. C's and the rest were nucleated reds. Differential count showed polymorphonuclears 53 per cent, small lymphocytes 23, large lymphocytes 20, eosinophiles 1, myelocytes 1, transitionals 1, and 406 nucleated reds to 100 W. B. C's. The red blood count gradually increased, reaching its acme, 1,500,000, after transfusion and declined to 750,000 the day before death. The hemoglobin was always about 20 per cent, the color index being consistently between 1.1 and 1.3. The white blood cells ranged between 8 and 21,000. The differential varied but little. The last stained smear examined demonstrated 58 per cent polymorphonuclears, 24 per cent small lymphocytes, 4 per cent large lymphocytes, 4 per cent transitionals, 4 per cent eosinophiles and 9 per cent myelocytes. There were 213 nucleated red cells to 100 white cells. All nucleated red cells show reticulum with vital stain. The reticulated count was approximately 25 per cent. The smear showed a great variation in the size of the red blood cells, marked variation in shape, some achromia, rather numerous large cells (macrocytes), some polychromatophilia. A few cells showed Cabot's rings. The nucleated red cells and reticulated cells were less numerous than in previous smears, suggesting lessened activity of the bone marrow.

The clotting time was 8 minutes by the sterile centrifuge method; and the bleeding time was 7½ minutes. The platelet count was 28,000. Blood cultures were negative. Blood Wassermann was negative.

Urine on entrance had a specific gravity of 1014, was alkaline in reaction, negative for albumin and sugar and contained a few granular casts microscopically. A week later, the reaction was acid, there was a 2 plus albumin and a few red blood cells. Subsequent examinations were negative.

Icterus index was 11 units. Van den Bergh direct was negative, indirect 1.3 units.

Examination of the material from the tonsillar ulcer and gums showed numerous spirilla and fusiform bacilli.

PROGRESS: Patient was in the hospital thirty days.

Nov. 19. Patient was transfused with 500 cc. citrated blood from a donor grouped directly against the patient, four hours after entry. There was no reaction. Patient continued to bleed from nose and mouth. Pack inserted.

Nov. 21. Consultation by Dr. H. B. Lemere. "Vincent's ulcer on the left tonsil about 1½ cm. in diameter at the upper pole. Peritonsillar abscess discharged through this yesterday. Larynx freely movable, no swelling. Normal. Nose packed with gauze not disturbed". Peritonsillar abscess had broken through the ulcer on the night preceding and a posterior nasal pack had been inserted at this time because of bleeding.

Nov. 23. Consultation by Dr. Weinberg concerning the suprapubic subcutaneous abscess. Advised incision and drainage. This was done the same evening. No frank pus obtained, simply a circumscribed mass of necrotic tissue shelled out. Cultures taken at this time showed no growth.

Nov. 25. Had had several hemorrhages since 11-23, losing at one time about 6 ounces of blood. Patient complained of roaring in the head and nausea.

Nov. 26. Patient felt better but appetite was poor. Bleeding had checked. Complained of swelling on the left side of the neck with tenderness. A few tender glands could be felt. Chest examination could be made for the first time today and no abnormal findings noted.

Dec. 2. Given 10 cc. 1 per cent mercurochrome intravenously. There was a moderate diarrhea but no rise in temperature followed.

Dec. 8. The ulcer above the pubes gave the patient more trouble today. There was a deep crater with a raised border. There was a conspicuous absence of inflammatory zone. There was a small ulcer on the back of the neck as well as on the right arm, which was not at the site of the intravenous injection. In the neurological examination the vibration sense was found to be apparently present.

Dec. 12. Patient got out of bed several times and was somewhat delirious. The eyes had increased puffiness. He ate but little. There was little or no sphincter control. Bled some today from the right nose, and complained of pain in the right ear.

Dec. 13. Right ear drum perforated, discharged creamy yellow pus. Patient appeared brighter and had a better appetite. Bleeding occurred intermittently.

Dec. 17. About 8 p. m. patient suffered a chill. Temperature rose to 105.4 by mouth, pulse 138, respirations 37. Except for a few fine rales posteriorly, the chest was clear.

Dec. 19. Patient complained of earache. Examination showed a large amount of pus in the right external auditory canal, exuding from a perforated drum. Left drum appeared normal. Because of repeated hemorrhages from the nose the question was raised about removal of the packs and a thorough examination for the bleeding point. Anterior packs were no longer effective. Dr. Lemere was called who inserted a posterior pack but hemorrhage was uncontrollable. Pulse and respiration became weaker and patient died 7:55 a. m.

DR. A. D. DUNN'S DISCUSSION

Pallor with weakness and shortness of breath denote a severe anemia. Two types must be borne in mind, the primary or idiopathic and the secondary due to (1) hemorrhage, (2) infection or (3) to a hemolytic poison. The yellow color and numbness of the hands suggest a primary anemia. The difficulty in swallowing complained of may be due to either a local condition in the throat or to a medullary disturbance of some sort.

Three months before admission there had been a spontaneous profuse hemorrhage from the nose and mouth, severe enough to cause unconsciousness. There was no preceding history of infection, but a mouth infection was noted shortly. He went to a dentist to have some teeth pulled but the dentist refused apparently on account of the condition in the mouth. Only on advice of a physician were extractions done and the expected bleeding followed.

The following week bleeding recurred independent of removal of teeth. There were many spontaneous hemorrhages. The patient grew weaker, there was shortness of breath and the hemorrhages became uncontrollable. We have then: (1) anemia, (2) gingivitis, (3) hemorrhage—a symptom complex not so unlike scurvy.

The physical examination revealed a very pale, weak, poorly nourished, young man, dyspnoeic on the least exertion and with puffy eye-lids. The red count on entrance was only 770,000. The large number of nucleated red cells and reticulated cells shows that immature cells were being hastily placed in circulation. The oxygen transport system was breaking down. The heart muscle worked badly from lack of oxygen and beat faster in order to aireate the few red cells remaining; there was shortness of breath and a hacking cough; the patient was in a state of anoxemia; acidosis and edema followed.

The mouth infection was a most important finding. On examination a sloughing crater ulcer was found in the left tonsil with a surrounding area of edema. There was a fetid breath. A fetid ulcer in the mouth always suggests a Vincent's infection. On the other hand Vincent's organisms are common inhabitants of the tonsil, found in the caseous material and because one can get a Vincent's organism complex out of a smear from the mouth it is not to be assumed that a Vincent's infection is necessarily the cause of the patient's trouble. Not long ago I saw a patient from whose mouth a smear had been taken and the laboratory had made the diagnosis of Vincent's infection. Salvarsan and local treatment were advised. A Vincent's infection was present to be sure, but in an ulcerating epithelioma. The laboratory man should not make the diagnosis of Vincent's infection as the cause of the patient's symptoms. He should be content to say that the Vincent's organism complex is present and there rest his case.

The heart was not enlarged, there was a soft systolic murmur heard at the apex, presumably of muscular origin. Cardiac measurements were not given. Therefore, we cannot assume anything beyond acute heart muscle degeneration.

The abdominal examination revealed a rather peculiar condition above the pubes. Was this an abscess?

Intern: A localized necrosis of tissue. No definite pus was found on excision. There was no surrounding inflammatory zone. The mass shelled out. Cultures taken at this time were negative. Later another similar sore appeared at the elbow.

Dr. Dunn: That type of lesion suggests pyemia.

Intern: Cultures taken the night before death were positive for staphylococcus.

Dr. Dunn: Which might be a contamination or a secondary invader.

The blood findings are exceedingly interesting. There was a high grade of anemia, leukocytosis at times, showers of nucleated reds and a plus one color index. In other words, there seems to have been an acute anemia with some of the findings of a chronic, hemolytic anemia, which had made excessive demands on the bone marrow. The bone marrow responded by throwing a lot of immature cells into the blood stream. Undoubtedly some toxin was destroying red cells, and added its strain to that already inflicted by the hemorrhages. There was also a normal clotting time, an increased bleeding time and a low platelet count. A platelet count should be considered below normal when it is under 125,000. Platelet counts below 70,000 are distinctly pathological. We have in our case a condition that occurs in the purpuras, i. e., thrombocytopenia.

To analyze correctly the sequence of events and construct a valid anatomical diagnosis is extremely difficult with the data available. There is no history of an infected area in this man's body before the infection which started in the mouth. A Vincent's infection was present. Bleeding began after this infection and occurred at irregular intervals and was uncontrollable. There was both blood loss and blood destruction. There was a septic temperature and the clinical course was that of a pyemia. The following diagnosis is suggested, not all of which is capable of anatomical substantiation.

(1) Pyemia, (2) hemorrhagic purpura—infectious in nature, (3) Vincent's infection of the mouth and tonsil, (4) parenchymatous changes throughout the body, results of infection and anemia involving muscle, liver and kidneys, etc., (5) hyperplasia of the bone marrow. This change will not be such as is characteristic of pernicious anemia but excessive demands have been made upon the bone marrow and the production of blood platelets has been materially reduced. (6) A peritonsillar abscess, (7) osteomyelitis of the alveolar process. There has been also (8) otitis media with possible involvement of the mastoid cells—this occurred some time before death.

DR. MILLER'S DISCUSSION

On external examination it was noted that the body was in a rather poor state of nourishment.

In the mid line, just above the mons veneris, was a circular gangrenous lesion, 8 cm. in diameter. The surface was crusted with thin dried material. Thick, white pus exuded through cracks in the surface crust when the lesion was manipulated. About 10 cm. above this lesion and also in the mid line, was a second similar lesion, 15 mm. in diameter. Over the right internal supracondylar region was a third lesion, 2 cm. in diameter. On the back of the neck was a fourth similar lesion. Sections through these lesions showed the skin and subcutaneous fat to be necrotic with very little reparative or defensive reaction about them. Microscopic study revealed a leukocytic infiltration, consisting of large, atypical mononuclears resembling endothelial cells with a few plasma cells, lymphocytes and a very few polymorphonuclears. The blood vessels were not engorged and there was no new connective tissue or blood vessel formation. In the necrotic material were numerous, large masses of cocci. Cultures revealed Staphylococcus Albus, an organism with very feeble pathogenic qualities. Thrombosed blood vessels which might explain the lesions were not found. Vincent's organisms were not found in these lesions. The histology was not typical enough to name the lesion specifically.

The finger tips were slightly clubbed. The glands of the groin, axillae and the neck could be palpated but were only slightly enlarged. The anterior nares, the external auditory canals and the mouth contained clotted blood.

The left pleural cavity contained 300 c. c. and the right 100 c. c. of clear fluid. There was none in the abdomen. The amount of pericardial fluid was 10 c. c. Relations of the viscera and the linings of the cavities of the trunk were normal.

The heart was collapsed and light colored, but the muscle was of good consistency. The weight was 370 grams. No changes were noted in the valve flaps or in the valve orifices. In the endocardium of the septal wall of the right ventricle was a white abscess, 2 mm. in diameter. Direct smears of this material contained cocci resembling staphylococcus and large bacilli, which were B. subtilis. Sections revealed an unusually small amount of reaction about the abscess. The muscle cells stained faintly, probably indicative of a small amount of glycogen.

The thymus was small, consisted mostly of fat, and microscopically showed nothing abnormal.

The thyroid was normal on gross and microscopic examination.

The left lung weighed 440 grams and the right 650. The increase in weight was due to some edema posteriorly. Sections revealed nothing in addition.

The liver weighed 2060 grams. The gallbladder and its ducts were normal. The color was very light mahogany but it was not mottled. The usual brownish stain of pernicious anemia was not recognized. Sections, however, revealed considerable brownish pigment which tended to be localized about central veins. The parenchymal cells stained faintly. There was considerable lipoid deposit in the liver cells about central veins. Here and there throughout the liver substance in the region of the portal vessels were small areas of necrosis. Many of these were infiltrated by leucocytes, consisting of polymorphononuclears, which predominated, and mononuclear phagocytes. Organisms were not seen in these lesions. They were no doubt the result of absorption of toxic material from the intestine and it is probable they were infectious. These lesions are very common in septicemia.

The pancreas was not remarkable grossly or microscopically.

The gastro-intestinal tract was opened from the middle of the esophagus to the outlet. The content was carefully inspected for parasites but none were found. The mucosa of the stomach and small bowel contained quite a number of irregular hemorrhagic areas, the result of capillary oozing. The mesenteric lymph nodes were slightly enlarged and soft. The stomach content revealed no free hydrochloric but a total acidity of 112. It contained some partially disintegrated blood also. Sections revealed a rather dense infiltration of mononuclear leucocytes, but the postmortem disintegration was quite marked.

The spleen weighed 280 grams. There was no more than the usual amount of blood pigment. Pulp was moderately increased. The sectioned surface showed a number of triangular shaped, light colored portions of splenic tissue, resembling infarcts. Sections showed these to be necrotic but surrounded by no reparative reaction. Blood pigment was not as abundant as one would expect in long standing anemia. Many of the pulp cells were markedly degenerated and many of them had phagocytized red cells and even leucocytes. The lymphoid nodules contained mitotic figures. Some of the blood vessel walls contained hyaline substance, resembling amyloid, but it was moderate in amount.

The kidneys were both heavy. The right weighed 220 grams and the left 250 grams. The two organs were similar. The capsule stripped easily, leaving a smooth, slightly injected, yellowish surface. They were soft in consistency. Throughout the kidney substance in both the cortex and medulla were quite a number of abscesses. Some of these were triangular in shape, indicating that they were embolic. There was no evidence of infection in the pelvis. Sections showed central areas of necrosis surrounded by leucocytes of all types, but mononuclears predominating. The polys were surprisingly few. The reparative reaction on the part of the tissue was practically nil. In the necrotic centers quite a number of masses of cocci could be seen. The kidney parenchyma elsewhere was swollen and granular and an occasional cast could be seen in the tubules.

The adrenals were not remarkable. The bladder contained 200 c. c. of dark urine, in which there were many mononuclear leucocytes, a few polys, and some cellular casts. There was a 2 plus albumin but no blood.

The prostate was unusually small but otherwise was perfectly normal.

The brain weighed 1440 grams. The cerebrospinal fluid was estimated to be about twice normal. There was no flattening of the convolutions or imprint of the foramen magnum to indicate unusual pressure. There were no changes noted microscopically. Sections of the cord revealed a normal quantity of myelin.

Both internal ears, the sphenoidal sinuses and the ethmoids were filled with partially clotted blood. There was no purulent exudate, however. It is not probable that this hemorrhage was the result of infection.

Many of the teeth were absent. The gingiva were retracted quite markedly around those present. There was a fetid odor but the membranous exudate so characteristic of Vincent's infection was absent. Sections showed a chronic, inflammatory process that was not specific.

Bone marrow was taken from the middle third of the right thigh and it was greyish red in color. Grossly it was not the deep red color of pernicious anemia, but was definitely hyperplastic. Fat tissue could not be recognized anywhere grossly. Sections of the bone marrow showed an unusually large number of nucleated red cells. Some of these should be called megaloblasts, but it is impossible to say whether they were or were not in the blood stream. The production of red cells was by far the most prominent feature but there were also a number of atypical, or premature, white cells.

Sections of the lymph nodes revealed a marked hyperactivity. The normal architecture was entirely destroyed, most of the lymphoid tissue being replaced by stroma in which large mononuclear cells were enmeshed and these resembled leucocytes. According to the morphology these leucocytes were not those usually seen in the lymph nodes but resembled more the premature polymorphonuclears. An occasional mitotic figure was found here.

Blood taken from the right atrium contained Staphylococcus Albus in pure culture.

We may sum up the postmortem findings as a septicemia by Staphylococcus Albus, gangrenous ulcers of the skin, emaciation, hemorrhage of the mucous membrane of the sinuses of the head and gastro-intestinal tract, hyperplastic bone marrow of the pernicious anemia type, and hyperactivity of the lymph nodes. The abscesses of the kidneys, spleen and liver with the focal necrosis, are no doubt part of the septicemia. It is also possible that the abscesses of the skin are part of the septicemia. The Staphylococcus Albus is not proven to be the primary invader, however. The usual deposit of blood pigment so characteristic of pernicious anemia is absent. The cord changes of pernicious anemia also are absent.

Our conception of pernicious anemia is far from complete. Therefore, it is impossible to say with certainty whether or not this patient's condition should be looked on as primarily one of pernicious anemia with complications. We have the hyperplastic bone marrow with the plus color index and some clinical manifestations of cord changes but none demonstrated at postmortem. If this is our conception of pernicious anemia, we must accept this case as such. However, similar blood pictures and similar bone marrow changes have been produced by infectious agents and these have not been accepted as pernicious anemia. The high acidity of the gastric content, the absence of cord changes, the tendency to hemorrhage and the short duration of the disease speak against pernicious anemia. The effect of the Vincent's infection on the hematopoietic tissues is not clear. There are two views, one is that these tissues are materially modified by the toxin of the Vincent's organism, and the opposing view is that these cases are all examples of such diseases as leukemia or pernicious anemia upon which the Vincent's infection has been ingrafted. It is even denied that the Vincent's organism has any pathogenic properties whatever and that it is always a saprophyte. Until these questions are cleared up, it is impossible to unravel a case of this kind so that it can be thoroughly understood. It must, therefore, be placed with the list of "unclassified" or imperfectly understood conditions.

Dr. Dunn: There are one or two things to mention. Disease conditions are often peculiar in which the Vincent's infection is present. I have seen two cases in the last few years in which there was an outpouring of the white cells into the circulation in huge quantities in a Vincent's infection. This case, in the light of that experience, is an interesting one.

Dr. Miller: Did you put any relation between those two conditions or did you infer that the leucocytes were the result of an infection?

Dr. Dunn: You may infer what you please. However, there are cases of Vincent's infection in which the bone marrow behaves strangely. This case is not pernicious anemia but the bone marrow changes found partake of some of the characteristics of those found in pernicious anemia. Fifteen years ago this case would probably have been diagnosed as a pernicious anemia. It is interesting to find that the condition of purpura hemorrhagica was corroborated by findings present after death.

THE TREATMENT OF CATARACT WITH LENS EXTRACT*

D. D. SANDERSON, M. D.,
Lincoln, Nebraska.

The non-surgical treatment of cataract has been one of my hobbies for so long that it was with great pleasure that I found experimental laboratories working on the theory that cataract was a result of a condition apparently of improper metabolism. I have contended that it was either a condition of metabolism directly or through the internal secreting glands. Inasmuch as the internal secreting glands appear to have an influence over metabolism this must be more thoroughly worked out by the physiologist.

For practical purposes it is enough for those of us depending on our clinical results to not handicap our work by being too theoretical. We must content ourselves with the conclusion that many of our body deficiencies can be supplied by administering a substance from that deficient part. As yet our physiologists have not definitely determined the exact action of this replacement. I will report two cases of cataract that appear to merit the conclusion that repair may be made by lens extract injections. In the material used for these cases 1 cc lens extract represents two gms. lens. These cases have been under treatment sufficient time to definitely determine their progress.

A. L. W., age 63, complained of failing vision for some time. General physical examination negative. Ophthalmoscopic examination showed a central lens opacity extending almost to the margin of the lens. Vision O. D. 5/200, vision O. S. 20/100, unable to improve with glasses. The eyes were generally normal. The fundi could only be seen indefinitely; tension O. D. 32, O. S. 33. She was started on treatment with hypodermic injections of ½ cc, 1 cc, 2 cc, 2½ cc, 3 cc, on alternate days and 3 cc injections three times a week afterward. One month after the first injection her vision was O. D. 5/100, O. S. 20/100. Two months after starting, vision O. D. 20/200, O. S. 20/70. The opacities do not appear so dense. She easily notices she can see more clearly.

S. H. L., age 76, general physical examination negative, complains that his vision is blurring. Eyes are normal. Fundi indistinct but appear normal. Has general opacities of each lens but more dense at the margin. Vision O. D. 20/70, O. S. 20/50. Was given ½ cc, 1 cc, 1½ cc, 2 cc, 2½ cc, and 3 cc injections of lens extract substance on alternate days and 3 cc injections three times weekly afterward. One month later his vision was O. D. 20/50, O. S. 20/30. Now, six weeks after the first injections, his vision is O. D. 20/30, O. S. 20/30 plus without glasses.

It is frankly admitted that two cases do not usually prove or disprove a theory but two favorable cases certainly encourage the experiment. These two cases would encourage the conclusion that in some way the lens extract given hypodermatically either directly or indirectly stimulates the repair of the opaque lens. I am indebted to Eli Lilly Company for their very liberal supply of lens extract substance and extreme interest in the results obtained.

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Vol. XII December No. 12

Yuletide

Here's a joyous Christmas Greeting
Just for you.
Happy Days it is repeating
Just for you.
Health and wealth and joy and cheer
Not a sorrow, not a tear
Thruout all the coming year
Just for you.

MEDICAL EDUCATION IN THE EARLY EIGHTIES

It is interesting to note the development of medical education during the last half century. To the younger men and women in the profession the progress made in medical education since the early Eighties is almost unbelievable and to those who are the product of that early system, it is an interesting fact recalled with smiles and pleasant memories.

Under our system of individual State's rights, the regulation of educational institutions and of licensure belongs to the several states—no National law can cover the matter. The laws pertaining to medical education and licensure were somewhat lax in all the states up to the beginning of the present Century .

Following the Civil War and particularly during the decade preceding 1885, the Middle West was developing rapidly under the Homestead law and new communities and new towns sprang up as if over night. The demand for physicians to supply the needs of the settlers was somewhat urgent and medical colleges came into being in middle western cities and elsewhere to supply the supposed demand.

The requirements for graduation in medicine in the early Eighties, speaking generally, were three years of study under a preceptor, including two courses of lectures at medical college. This might be, and was, variously construed to mean constant study, or part time study, under a preceptor and the college courses varied from twenty to twenty-four weeks. Competition for students was rather keen and the moral stamina of the student often governed in the selection of a school as much as the condition of his purse.

A digest of requirements of a number of selected schools will give a fair idea of the standards of that time:

1. *Rush Medical College.* For the session of 1881-1882 the announcement makes no mention whatever of entrance requirements. A three year course was given consisting of 21 weeks each, the students being encouraged to complete also the three spring sessions which extended from April 4 to June 20. For students who complete all three winter sessions and at least one spring term, there will be awarded a certificate of honor, in addition to his medical diploma. The total fees for the course amount to $120 for the 21 weeks with an additional $40 if the spring session was taken also.

2. *State University of Iowa College of Medicine.* The announcement for the session of 1880-1881 offers two courses of instruction, (a) a two years' course which is supposed to be included in a three years' course under a preceptor and (b) a graded course extending over three years. The course is said to extend from Oct. 6, 1880, to March 2, 1881, which is about five months or approximately 20 weeks. The first year consists of anatomy and chemistry, the second of physiology, materia medica and therapeutics and dissection and the senior year of lectures, practice of medicine, surgery, obstetrics, medical jurisprudence, eye and ear, and diseases of children. The entrance requirements are said to be an examination in the English language, arithmetic, history, geography and natural philosophy. The total fees for the year amounted to about $60 while for the graded course a lower fee was charged, this amounting to $25 each year, with

an additional charge of $10 diploma fee in the third year.

3. *Harvard Medical School.* For the session 1880-1881 the entrance requirements are, passing of the entrance examination to Harvard College or presenting a degree from a recognized college or scientific school or passing an examination in English, Latin, physics and in an elective subject which might be either French, German, algebra, plane geometry or botany. The medical course is four years of graded work, each extending from September 30 to February 14, which is only four and a half months. Clinics at Harvard are offered in the Massachusetts General Hospital, Boston City Hospital, Boston Charitable Eye and Ear Infirmary, Marine Hospital and the Boston Dispensary. The total fees per year at Harvard are quoted as $200.

4. *Missouri Medical College.* Announcements for 1881 refers to this school as the "McDowell Medical College". A two year course is required and there is also an optional three year course. No reference is made to requirements for admission. The length of the course is five months. The fees quoted for the year are given as $85 and a diploma fee of $25 is charged at the time of graduation.

5. *Bellevue Hospital Medical College.* The announcement for 1880-1881 shows that a three year course of instruction is required with a preceptor, including two years of lectures or attendance on three full courses of lectures. The winter course begins November 1st and continues for five months. Entrance requirements are covered by an examination in English, grammar, arithmetic, algebra and geometry. Fees per year amount to approximately $130 to $150, including examination fees.

6. *Jefferson Medical College, Philadelphia.* Announcements for 1880-1881 make no reference to entrance requirements. The course of instruction is three years of five months each with a preceptor, including two years of lectures. Fees are $155 for the first session and $175 for the second session.

7. *University of Pennsylvania, School of Medicine.* Catalogues for 1880-1881 specify the entrance requirements as an examination in geography, Greek, English, Latin, mathematics. The medical course consists of a three year graded course of five months each. Fees for a year amount to $155 each year.

In none of the colleges is there anything to indicate that any college work whatever was required for admission, nor was actual high school work specified. The entrance was almost always by examination which might mean little more than the ability to read or write.

8. *Omaha Medical College.* The Second Annual Announcement for the session of 1882-83 requires that the candidate for admission be at least 18 years of age and possessed of a creditable English education. He must pursue the study of medicine for three years, including attendance at two courses of lectures. Clinical instruction is a feature of the second year's course. A graded course of three years is offered and strongly advised*.

Under this system of requirements were created the physicians of a generation ago, some of them still actively with us and willing to admit that some pretty good ones were made in those days!

SIOUX CITY SECTIONAL MEETING, COLLEGE OF SURGEONS

About one hundred fellows and other surgeons attended the meeting of the Iowa, Nebraska and South Dakota Section of the American College of Surgeons at Sioux City, November 14 and 15.

There was a full program and the meetings were full of interest. There were clinics at the various hospitals both forenoons. Clinical addresses were also featured at the Hotel Martin from 10:30 to 12:30. Hospital conferences occupied the attention each afternoon and the first evening following a get-together dinner. The problems of the small hospital occupied the time of the first conference and the larger hospital the second. Many important problems were elucidated and much interest was shown in the conferences.

The last evening was given over to a Community Health Meeting, at which addresses were made by the associate directors of the College of Surgeons and by Dr. George David Stewart, New York City, President of the American College of Surgeons.

THE INTER-STATE POST-GRADUATE MEDICAL ASSOCIATION OF NORTH AMERICA

The annual International Meeting of the Inter-State Post-Graduate Medical Association of North America, held during the week of October 17th, in Kansas City, Missouri, was one full of material for the entire profession. The completeness of program and regularity of fulfillment was just as apparent as it had been in past years. The remarkable ease with which three or four thousand men are handled and the punctuality the program committee exhibit in presenting their numerous speakers from all parts of the country have advanced beyond the stage of comment. There was a wealth of foreign talent, in addition to the usual domestic talent. The seating arrangements and acoustic properties of the convention hall were everything that any one would desire.

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*Information by courtesy of the Council on Medical Education of the A. M. A., and by Dr. J. Jay Keegan, Dean, University of Nebraska College of Medicine.

Numerous new and striking things were brought forward by the old favorites, as well as by many new men. Dr. Joslin was particularly delighted over the fact that there was such a vast increase in the number of children who have had their diabetes ten years or more, and he continued to elucidate on the subject of the relation of arterio-sclerosis to cholesteremia and high fat diets in diabetics.

There was considerable discussion as to the relation of gastric ulcer to gastric carcinoma. Dr. Warthin, of the University of Michigan, together with Mr. Wright, of Manchester, England, contending that there was little or no evidence for a relation between these two pathological conditions, and insisting on the constitutional and familial tendencies toward these disturbances. They were also strongly of the opinion that cancer was not infectious in origin.

Dr. Pottenger delivered his usually simple and clarifying discussion on the treatment of pulmonary tuberculosis, and stressed the use of rest and psychology.

Sir John Broadbent, London, England, and Dr. Barker, of Johns Hopkins, contributed much to the knowledge of their audience in regard to coronary sclerosis, anginal pains and cardiac failure as a result of these conditions. They both stressed the necessity of absolute rest in bed as treatment of the condition, and the prevention of arterio-sclerosis by attention to diet and relaxations in middle life.

The paper by Dr. M. J. Rosenau, of Harvard, on poliomyelitis was most interesting. Dr. Rosenau is extremely conservative. He seemed to think that the only treatment was convalescent serum, making no mention of the more specific serums of Dr. Rosenow, of Rochester, nor of the Rockefeller Institute serum. Very interesting observations had been made, and in two separate epidemics of poliomyelitis, one in New York State and one in England, the source was traced definitely to raw milk. This is a matter that should be carefully watched in all epidemics because of the typhoidal characteristics of the disease, i. e., that it occurs in summer, is febrile in its manifestations, and occurs in epidemics.

Dr. Marriott, of St. Louis, in his discussion of nephroses and diabetes, was probably one of the most popular speakers in the assembly. The clarity of the outlines of treatment and the wealth of material that he presented for differential diagnosis, made him a most instructive speaker.

Another popular speaker was Dr. O. J. Kauffman, of Birmingham, England, both in clinic and in his discussion of neurasthenias.

Dr. D. P. Barr, of Washington University, St. Louis, spoke in a most intelligent fashion on the diagnosis and treatment of the chronic arthritides.

Dr. Charles Mayo, Dr. J. H. Bloodgood, Dr. Deaver and Dr. Crile interested their audience in their usual fashion. The symptoms of thyroid disease, and gallbladder and stomach diseases were probably the most complete that have ever been gathered together in the history of American medicine. The limitation of our space prevents us from going into the details of these valuable lectures.

Doctors Rowntree, Mann and Judd covered the subject of the physiology of the liver and functional disease of the liver, and gallbladder disturbances in a most complete way.

The first two or three days of the meeting the trend of opinion seemed to be away from focal infection as a predominating etiological factor in disease, but the last two days, with the help of Dr. Charles Mayo and Dr. Deaver and many others, it soon recovered its pristine strength and former stability.

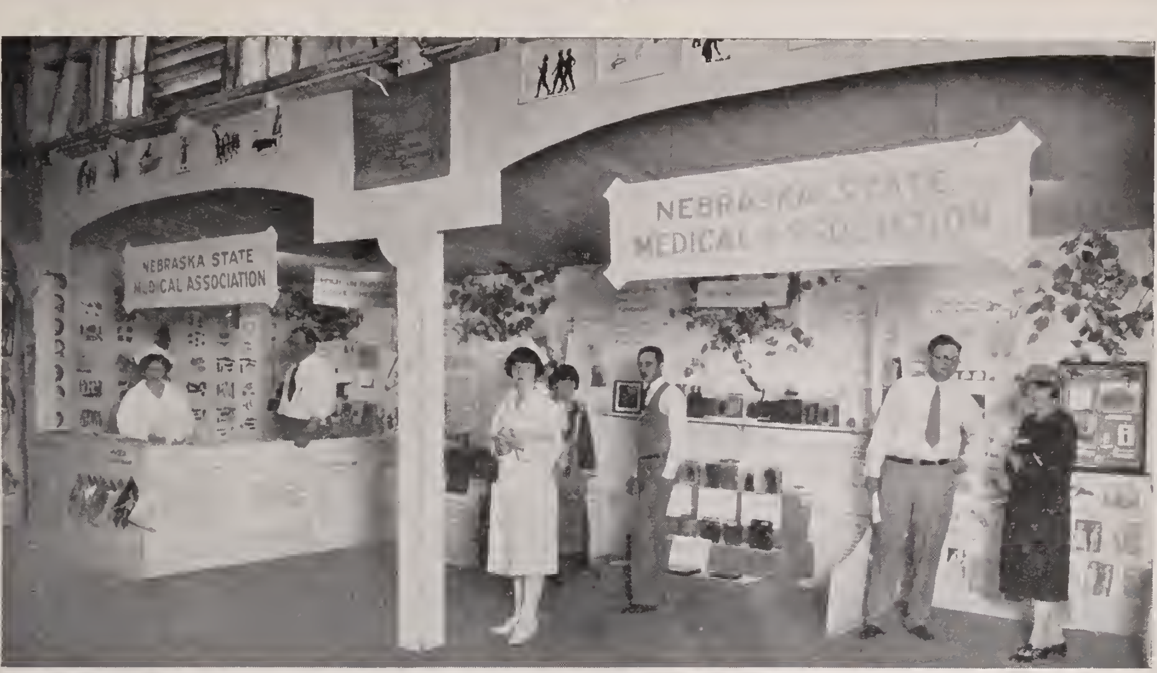
The newspapers were very generous in publicity for the entire meeting, columns being devoted to various topics that were brought up, and the matter being in a most readable form as far as the lay public was concerned.

These meetings are probably the most valuable that the profession have at the present time. The only criticism is the concentration of the program. Starting at seven in the morning and extending through until ten at night, with scarcely the hour for lunch or dinner, the mind and eye and body soon tire of the strain, with the result that the last two days are very often a complete loss unless the listener has been wise enough to take some recreation in the middle of the week.

Hotel conditions and weather conditions were perfect, and the whole assembly left Kansas City with the most favorable impressions as to the advantages of a place of this kind for such a meeting.

—F. W. Heagey.

A physician is apt to neglect the economic trend of the times, to fail to realize that he cannot work for the same fees today that he did twenty years ago. There are many men who are doing exactly that.—*Medical Economics.*


NEBRASKA STATE MEDICAL ASSOCIATION
NEBRASKA STATE MEDICAL ASSOCIATION

The Nebraska State Medical Association's Health Exhibit Booth at the 1927 State Fair.

BELT-LINE BOOBERY

The "Naughty Nineties", which in its more frivolous moods produced the Bloomer Girl and the tandem bicycle, could also don dignity with a plug hat, and in one of those moments evolved the dictum that digestion was aided by exercise after a meal.

Today we laugh at its styles and stand aghast at its science, but the perpendicular pronoun still towers in haughty isolation and makes its own rules while acknowledging the greatest advance of science the world has ever known.

Always there is the middle-aged man, bubbling with the vivacity of youth, who suddenly decides to heighten the visibility of his belt by bringing it out of the roll of fat in which it disappears. Believing his body still retains the power and agility of his mind he seizes a tennis racket on a hot afternoon and plays himself into a case of sunstroke. A doctor could have told him what would happen when a man grown soft with easy living takes up violent exercise suddenly, and afterward he will admit he should have sought advice first. But the damage has been done.

Although the more obvious stiffness and soreness disappear in a week the invisible weakening of his constitution may last for life. Physicians encounter cases of over-exertion in all fields of sport from handball to golf, and far too often the victim admits knowledge of the results of unaccustomed activity, but "didn't think it would hurt him."

The National Tuberculosis Association, which, through its sale of Christmas seals, is enabled to combat those things that make the body susceptible to tuberculosis, maintains that any man or woman verging on middle age who wishes to indulge in sport should begin only with the con-

There's a thrill of satisfaction when you buy Christmas Seals

THERE'S a thrill because you know that you are doing good for others. More than that, each seal you buy is also a direct aid to the health of your family and yourself.

The Tuberculosis Associations have already helped to cut the tuberculosis death rate by more than half. During 1928 they will conduct a campaign on the early diagnosis of tuberculosis.

Buy your Christmas Seals today. Put them on your Christmas mail and help spread their joyous message of health on earth.

1927 Christmas Greetings and Good Health

THE NATIONAL, STATE, AND LOCAL TUBERCULOSIS ASSOCIATIONS OF THE UNITED STATES

sent of a physician and under the direction of an experienced trainer.

The Nebraska State Medical Journal endorses this as sound advice, and suggests in addition that it would do no harm to have a physical examination each year before the season opens.

THE SURVIVAL OF THE UNFIT

Under civilized conditions of living, the vermiform appendix is no longer necessary to the human organism. Nature is, therefore, endeavoring to eliminate this organ. A person with a long, well-developed appendix is a candidate for extinction according to Nature's laws of competition; appendicitis, peritonitis, and death, with the elimination of the propagators of large appendices from the human stock, is her way of working out the question.

However, the threatened individual applies to the surgeon for help, and the surgeon, in saving the life of an individual, preserves the undesirable stock. For, the patient's tendency to a large appendix is transmitted to posterity regardless of the fact that his own has been amputated; the wooden-legged man's children have two good legs. The descendants of the operated man will be as imperfect in structure, or more so, from the standpoint of the appendix, as were our undeveloped and uncivilized ancestors upon whom Nature is trying to improve. The surgeon who is rescuing the individual, has succeeded in deteriorating the race.

This same principle is true of a great number of the accomplishments in medicine and surgery. There are many other imperfections in structure or organization analgous to the appendix, such as hernia, peptic ulcer, defective teeth, and the vast array of orthopedic conditions. The prevention of infant mortality preserves countless unfit; the care of mental and constitutional defectives on an equal footing with the rest of the population preserves a perilous mass of deteriorating influences to be transmitted to posterity to pollute the purity of the human stock. The newly developed qualities of mercy and kindness are a relief to the individual, but a distinct disadvantage to the race.

Does it not seem inconsistent that Nature should have given the human race a tendency which seems to be carrying us down to our own undoing? Usually she does not work that way. For, medicine and surgery, nursing and Red Cross relief, are just as much phenomena of Nature, as are the labors of birds to train their young to fly, the building of honeycombs by bees, or the care of eggs and the use of slaves by ants. The operation of man's brain is a phenomenon not intrinsically different from the operation of other organs possessed by Nature's creatures. A skyscraper or a State Capitol building is no less a work of Nature than an ant-hill or a coral reef. Is Nature then developing a self-destroying instinct in us, which will eventually deteriorate the race to such a point that it will no longer be able to keep its foothold upon the earth?

Probably not. The sympathy for the individual, the valuation of the individual that motivate modern medicine, surgery, and nursing, probably have a teleological purpose whose importance overshadows the relatively less important disadvantage of race pollution.

This human attitude is certainly a new thing. Only our own age knows, to any widespread extent, the mercy and helpfulness upon which the healing sciences are built, the desire to afford relief to unfortunates regardless of race, color, or residence. Up to very recent times the sympathies of man reached very little beyond his immediate relatives and friends. Strangers, slaves, enemies in war, foreigners—these were not human beings at all. They did not have feelings as you and I have; they were mistreated, neglected, tortured, callously abandoned to disease and starvation. The traditional cruelty of man to man has never been equalled by the wild creatures of the jungle. Human life has been cheap and human suffering disregarded since time began, down to yesterday. And now, the doctrine of mercy and human helpfulness is practiced so intensely that it threatens the integrity of the race.

Yet it has a purpose.

The lowest forms of life maintain their footing upon the earth by the sheer volume of reproduction; they overwhelm obstacles by the mere weight of numbers. Flies, weeds, bacteria, are all compelled to multiply so rapidly that the individual's only service to the race is fertility. Casualties are so numerous that individuals have no opportunity to be of any value except to reproduce new numbers to replace losses, so that the race can maintain its strength. Replacement is their only defense.

Among the higher forms of life, individual qualities begin to have value. The maintainance of the race depends less on numbers and more on the ability to deal with environment. There begin to be individuals whose value to the race is more than that of a unit, and who cannot be replaced by merely another unit. The *prevention* of losses and casualties and the preservation of individuals begins to assume importance. It becomes necessary that life for the individual become less perilous. At first the individual had to depend on his own brain in looking out for himself; the preservation of the individual was the individual's own concern.

But, "looking out for oneself" is becoming too difficult and complicated a task for an individual. Life is crowded, complex, difficult. The primitive brain is not equal to the task; it must be trained by experience with environment to take its place in the whirl. For this training, many years are necessary, during which the individual is not an asset to the race; he requires the efforts of others to protect and train him. After the training has been acquired, the individual is far more valuable to the race than as a reproductive unit; his worth cannot be replaced by merely another unit.

Also, there came the ability for the individual to profit by the experience of others who have had experience with environment. One individual can have the benefit of experiences which represent many lives. The ability to inherit the exprience of the entire past of the race is what has raised man above all other animals. Education is now a powerful factor in maintaining the footing of our race.

Nowadays the environment is so complicated, there is so much individual and racial experience to be acquired, that it is taking the individual a larger and larger percentage of his life-span to prepare himself to live in this world, merely to keep his own footing. That he might be of benefit to the race, so much must be added to his native equipment that he must live many years and reach a considerable age.

In other words, the race now requires of the individual a long life, in order that sufficient experience may be acquired to carry him a little ahead of where the race had been when he was born.

Biologists agree fairly well that the race cannot develop much further morphologically. In respect to physical form and function, the limit has about been reached. It has been reached by ages of infinite multiplication and disregard for the individual. Instead of expecting a better brain from the processes of evolution, we can look forward only learning how to make the fullest possible use of what we have. In this respect we have barely scratched the surface; the possibilities ahead are untold and thrilling. To realize them, however, long years of life for the individual are necessary.

To attain long life in a world where peril threatens at every turn and extinction lies in wait at every step, the individual needs the cooperation of the entire race. Each man needs the help of all the rest, as individuals, as society and state. He needs the help of his next-door neighbor, of his state government, and of people in China and Tierra del Fuego.

The accomplishment of such a huge task is possible only by means of a powerful emotional attitude, amounting to an instinct in the old sense of the word. The entire race has got to be imbued with the idea that human life is infinitely precious, that suffering must not be permitted. The suffering of others must be a danger sign to arouse in us a response, no matter how distant the sufferer or how lowly. No task must be too difficult, no service too great, in order that suffering may be relieved and life may be saved.

Of course, the question of the deterioration of the race and the pollution of the stock cannot be disregarded. But, a race that has had the ability to reach its present stage of achievement in spite of the difficulties it has met, can be depended upon to deal with this question also. After all, its solution presents less real difficulty than that of the forward movement of civilization. Signs are already apparent of the awakening of a consciousness of the danger, and tendencies are pointing strongly in the direction of relief measures.

Only by the adoption of this new human attitude of the sacredness of human life, as a racial habit, can individuals be preserved to us throughout the long life that is indispensable for the only sort of progress that remains possible to mankind.

—**Miles J. Breuer.**

EDITORIAL PARAGRAPHS

Surgeons joint tissues: lawyers join issues.

The Seiler Surgical Co. carries a new ad in this Journal.

This number of the Journal completes the twelfth volume.

The Taylor Instrument Co., has a new ad in this issue of the Journal.

The decadence of advancing years—but why discuss unpleasant things.

Idiosyncrasy against iodine and belladonna should always be borne in mind.

The Red Cross reports that relief was given in 77 major disasters in the year preceding June 30, 1927 .

The cost to the hospital in New York of

student nurses is $1,280 per year and the average cost over the United States is $870.

Drs. Lemere and Banister, Omaha, carry a professional card in this issue announcing removal to 920 Medical Arts Building.

It has been determined that medical bills figure in most bankruptcies, but it would be unkind to say that they cause the bankruptcies.

This Journal can use a number of well worked up papers between this date and the annual meeting next May and solicits such contributions.

The Nobel Prize in Medicine for 1927 was last month awarded to Dr. Julius Wagner von Jauregg of Vienna for his malaria treatment of paresis.

Sauer kraut has come to the fore as a desirable article of diet on account of its lactic acid content. "Oh sauer kraut is bully; I told you he vas fine", etc.

We have it from the American College of Surgeons that the average cost of a patient to the hospital over the United States is $5.35 and that the minimum is about $3.60 per day.

Physicians are more numerous in the United States than anywhere else. We have 133 physicians to every 100,000 population, as against Great Britain's 92, Germany's 51, and France's 35.

The law giving a physician the power to have a prisoner released from jail on his affidavit that the prisoner's health or safety demanded that he be treated different from that provided in the sentence, was repealed by the last legislature.

Up to the last of October about 2,200 physicians had registered with the Department of Public Welfare under the new licensure law. This in the face of the fact that the American Medical Directory lists but 1846 physicians in the state.

The medical profession of Omaha is hammering home the idea and fact that the Douglas County hospital is inadequate and a disgrace to the city and county and is fostering propaganda for a bond issue for a new and adequate hospital.

An interesting medico-legal decision comes from New York. A testator provided that her estate should be divided into as many equal parts as she had grandchildren living at the time of her decease. One grandchild was born eight months and fourteen days after testator's demise. The court decided in favor of the child, basing the decision that a child born alive is alive from date of conception.

A flying squad of physicians has been organized in Australia by the cooperation of the Australian medical association and the government to give prompt medical and surgical aid to people in the remote bush country. Stockmen in remote sections hundreds of miles from physicians will now be able to command prompt medical attention. Each flying physician will have a radius of about four hundreds miles to cover.

A correspondent asks "whether a Doctor of Osteopathy enjoys all the rights and privileges to practice medicine that we M. D.'s do?" The osteopaths do not have all the rights of the medical profession by law; but they *enjoy* those rights the same as if they did have them. Osteopaths may give antidotes, anodynes, anaesthetics, antiseptics, by law; in spite of the law they practice medicine, even as you and I, only with less intelligence.

AUXILIARY NOTES

Mrs. G. H. Walker, president-elect, entertained the officers of the Women's Auxiliary of the State Medical Association at luncheon at the University Club at Lincoln, Friday, Nov. 4. Those present were: Mrs. F. A. Long, Madison; Mrs. F. B. Young, Gering; Mrs. Clarence Rubendall, Omaha; Mrs. S. A. Preston, Fremont; Mrs. G. Alexander Young, Omaha; Mrs. A. D. Munger, Lincoln. The meeting was devoted to discussion of plans for next year's work.

At a meeting of the Fifth Councilor District Medical Society held in Fremont, Wednesday, Nov. 9, the Dodge County Women's Auxiliary women were guests of the Medical Society at dinner. At a business session of the auxiliary the same evening, Mrs. J. S. Devries, president, presided.

The board of the Omaha-Douglas County Auxiliary met for luncheon and a business meeting, Nov. 11. Suggestions of the national secretary were endorsed and resolutions passed for cooperation with the Medical Society in its campaign for a new county hospital.

The program of the State Federation of Women's Clubs held at Kearney, Nov. 18, 19 and 20, provided for a symposium on cooperation between the Federation and its affiliated organizations. Mrs. Clarence Rubendall, as president, responded for the Women's Auxiliary of the State Medical Association with an address on health measures.

Mrs. A. D. Munger of Lincoln has been appointed secretary of the Women's Auxiliary of the State Medical Association for the current year.

NEBRASKA ALPHA CHAPTER, ALPHA OMEGA ALPHA

The following senior students in the University of Nebraska College of Medicine were elected to membership in the Nebraska Alpha Chapter of Alpha Omega Alpha, Friday, November 4th: John M. Christlieb, Omaha, Nebraska; Leonard A. Dewey, Fairmont, Nebraska; David I. Katsuki, Honolulu, Hawaii; John K. Martin, Klein, Montana; Mrs. D. Evelyn Miller, Clatonia, Nebraska; D. Herbert Miller, Clatonia, Nebraska; Esther M. Morse, Stuart, Nebraska; James P. Rigg, Hastings, Nebraska; Clarence W. Sabin, Laurel, Nebraska; Carl P. Wagner, Omaha, Nebraska.

This is a non-secret, fourth-year, Medical Honor Society, membership to which is based upon scholarship. It was organized at the College of Medicine of the University of Illinois, Chicago, August 25, 1902, and is the only order of its kind in medical schools on this continent. Its definite mission is to encourage personal honesty and the spirit of medical research. Public addresses, by distinguished physicians, are given each year under chapter auspices and many of these addresses have proved to be notable contributions to medical literature. Chapters of Alpha Omega Alpha have been established in the twenty-six leading medical colleges of the United States, and it is only to those attaining such rank that charters will be granted. The chapter at the University of Nebraska was established in 1914.

The election of members was held earlier this year than in previous years, so that new members be given an opportunity to actively carry on the work of the fraternity. A dinner and initiation for new members will be announced later, at which time a speaker of national importance will be present.

THE SOCIETIES

The regular meeting of the **Lancaster County Medical Society** was held October 18, 1927, in the new Sharp building, Dr. E. W. Rowe in the chair. Preceding the program of the evening the chair called upon Mr. Sharp, who was present, to speak a few words to the society concerning the new meeting place. Following his remarks the professional program of the evening was called. Dr. M. F. Arnholt and staff of the city health department rendered a report which outlined the present status of the department of health, the work which is being done, and the program for the future. The following members of the staff were introduced by Dr. Arnhold and spoke on their respective duties: Dr. L. J. Owens, Epidemiologist; Dr. E. W. Hancock, Clinician in Charge of the Tuberculosis Work; Dr. Geo. E. Lewis, City Physician; Dr. W. W. Carveth, Clinician in Charge of the University Place Clinic. Following the presentation of these physicians, Commissioner E. M. Bair of the Department of Public Safety, under which the health department operates, spoke to the society, stating that it was the desire of the Health Department to be the best that could possibly be produced and that it was his desire that there should be mutual cooperation between the physicians and this department. The report of this department was variously discussed by the members of this society. In closing, Dr. Arnholt outlined the plan for garbage disposal for the city and made a plea for close cooperation between the physicians of the city and the Health Department.

In the call for clinical cases Dr. D. D. Sanderson presented an essay of the virtue of treating cataracts of the eye with lens extract. He reported two cases under his care and made a plea for the virtues of this method of treatment in individuals suffering with such an affliction.

In the discussion of these cases Dr. Hompes pointed out that the procedure is not new and that volumes had been written on the subject from the experimental and clinical standpoint with the conclusion that the value of such treatment is questionable. These remarks were reiterated by Dr. Albin.

At this point in the meeting Dr. E. W. Rowe introduced Miss Beulah Wiedman, original nurse for the local chapter of the American Red Cross. Miss Wiedman spoke on her duties under her assignment to the city.

The chair called the attention of the society to the fact that the Nebraska State Nurses' Association will hold their meeting in Lincoln next week, and that there will be several prominent physicians from points remote who will speak before the gathering. It was moved and seconded that the chair appoint a committee to represent the Lancaster County Medical Society in extending an entertaining hand to these physicians while in the city of Lincoln. The motion was seconded and carried. The president appointed the following committee: Dr. R. O. Hummel, Dr. B. F. Bailey, Dr. Teal, Dr. Hohlen.

—Arbor D. Munger.

The **Fifth Councilor District Medical Society** meeting occurred at the Hotel Pathfinder, Fremont, November 9. Fifty physicians were present and the entire program was presented and listened to with unusual interest and attention. The program follows:

Dr. C. A. Roeder, Omaha, "Clinical Consideration of the Entire Alimentary Tract", with plates; Dr. Homer Davis, Genoa, "The Early Diagnosis of Tuberculosis", with Lantern Slides; Dr. C. R. Kennedy, Omaha, "Perforated Gastric and Duodenal Ulcer", with Plates; Dr. E. E. Koebbe, Columbus, "Focal Infection. The Oto-Laryngologist's Viewpoint"; Dr. C. G. Moore, Fremont, "Fractures", with Plates; Dr. Carleton B. Pierce, Omaha, "The Standardization of the Mercury-Quartz-Vapor ((Ultra Violet) Lamp".

Eighty persons sat down to the banquet. Following the dinner, Dr. B. R. McGrath, Grand Island, president elect, Nebraska State Medical Association, gave an address in which he brought out the wonderful progress made in Medicine in quite recent years. Dr. J. J. Keegan, dean, Nebraska University, College of Medicine, spoke on medical education comparing the systems of education employed in different periods and concluded by stating that it will be the policy of the University College of Medicine hereafter to apprentice senior students to physicians and surgeons for monthly periods during the summer, with the idea of getting the advantage the old preceptor system afforded students.

A very interesting program and a fine attendance featured the **Eighth Councilor District Medical Society** meeting at Stuart, October 13. The following officers were elected: Dr. William Lear, Springview, president; Dr. J. W. Gill, Chambers, vice president; Dr. J. P. Brown, Stuart, secretary-treasurer.

The program follows:

"Diagnosis of Hyperthyrodism With Special Reference to B. M. R., With Report of Cases", Dr. B. R. Farner, Ainsworth, Nebraska; "Asthma", Dr. E. L. MacQuiddy, Omaha, Nebraska; "Report of a Case of Otomycosis"; Dr. F. L. Wilson, Stuart, Nebraska; "The Triad, Chorea, Rheumatic Heart Disease, and Acute Rheumatic Fever", Dr. G. L. Clark, Omaha, Nebraska; "Treatment of Hemorrhoids", Dr. L. E. Moon, Omaha, Nebraska.

A six o'clock banquet was served.

The **Seventh Councilor District Medical Society** held its annual meeting on the afternoon and evening of Nov. 3, 1927, at Superior, under the presidency of Dr. J. A. Trowbridge, Superior. Thirty-two physicians were present. The meeting was held in the splendid new American Legion building and the place was what a place for such meetings should be, quiet and comfortable. The Nuckolls County Medical Society was the host at a fine dinner, also served at the Legion building. After dinner, Dr. H. E. Potter, Fairbury, councilor of the district and president of the Nebraska State Medical Association, gave a short resume of the work of the State association during the past year, and Dr. B. R. McGrath, president elect of the Nebraska State Medical Association, gave a very pleasing address. Dr. V. V. Smrha, Milligan, was elected president, and Dr. Rudolph F. Decker, Byron, was re-elected secretary. The program rendered, follows:

"Hypotension", Dr. J. Bixby, Geneva; "Epilepsy—A Case Report", Dr. Rudolph F. Decker, Byron; "Actinomycosis—A Case Report", Dr. W. N. Nelson, Hardy; "Some Pediatric Problems", Dr. W. O. Colburn, Lincoln; "Urologic Problems", Dr. A. C. Schoch, Hebron; "The Value of Your Laboratory Examinations", Dr. R. K. Johnson, Friend; "Classification of Dementia Precox", Dr. G. M. White, Ingleside.

—Rudolph F. Decker, Sec'y.

The **Custer County Medical Society** met at Broken Bow, November 8. Dr. A. C. Stokes, Omaha, and Dr. F. A. Burnham, Arnold, were the speakers.

The **Republican Valley and Tenth Councilor District Medical Society** met at Hastings, October 27, at the State Hospital. The program followed a noon luncheon tendered by Superintendent and Mrs. G. M. White.

Program: President's Address, Dr. J. M. Willis, McCook, Nebraska; "Early Tuberculosis", C. S. Kenney, M. D., Kansas Tuberculosis Sanitarium, Norton, Kansas; "Diphtheria Prevention Program in Kansas", C. H. Kinnaman, M. D., State Epidemiologist, Topeka, Kansas; "Health Examinations", Dr. L. W Rork, Hastings, Nebraska.

HUMAN INTEREST TALES

Dr. A. J. Beebe has located at Peru.

Dr. E. B. Downs has moved from Sumner to Monroe.

The Seiler Surgical Co., Omaha, has absorbed the Henry R. Gering Co.

Dr. C. W. Weeks, Ord, spent some weeks in Chicago hospitals recently.

Dr. E. E. Gallagher, La Crosse, Wis., visited his mother at O'Neill, recently.

Dr. Howard Updegraff, Omaha, has gone to New York to take special work in surgery.

The profession sympathizes with Dr. C. L. Lemar, Osceola, in the loss of his wife recently.

Dr. and Mrs. D. B. Stidworthy, Homer, enjoyed a hunting trip to the sand hills, in October.

Dr. J. B. Brown, Stuart, gave a health talk before the Boyd County Teachers' Institute in October.

Dr. A. J. Courshon, Chadron, has recovered from injuries received some time ago in an auto accident.

Dr. George H. Simmons, Editor Emeritus, Journal American Medical Association, visited Lincoln friends recently.

Dr. C. W. Morrow has moved from Beaver City to Fort Calhoun where he will engage in the drug business.

Dr. J. H. Matthai, Lincoln, was severely burned a month ago by a short circuiting of x-ray machine he was operating.

Dr. C. W. Edwards, Beaver City, has gone to Chicago to do special work in surgery, after which he will locate elsewhere.

Dr. Francis F. Tucker, for twenty-five years in the missionary field in China, has been lecturing in this state. He is a graduate of the University of Nebraska.

Dr. John M. Dodson, Chicago, spoke before the Omaha-Douglas County Medical Society on "The Importance of Medical and Health Education of the Public", October 25th.

Dr. F. D. Burgess, for many years a practitioner at Cedar Rapids, more recently one of the assistant physicians at the Hastings State Hospital, has resigned the position and moved to Salina, Kansas.

On the program of the Clinical Congress of Physical Therapy held in Chicago, October 31 to November 5, were three Nebraska men: Dr. A. F. Tyler "Physical Therapy in Fungous Diseases"; Dr. R. W. Fouts, "Measurement of the Quantitative Biological Effects of X-rays"; Dr. Victor E. Levine, "The Effect of Ultraviolet Light on Food".

NECROLOGY

A. G. Langstaff, Winnepeg, Manitoba; University of Toronto, 1877; for many years and to within a year a highly respected physician and citizen of Blair, Nebr.; former member of the Nebraska State Medical Association; was found dead in bed in his home in Winnepeg, October 20, aged about seventy-three years.

Alfred H. Thomas, Trenton, Nebr.; Homeopathic Medical Department, Iowa State University, 1884; member Nebraska State Medical Association; died September 23, 1927, aged about sixty-eight years.

Andrew Johnson, Moline, Ill.: University of Nebraska College of Medicine, 1890; sometime superintendent of the Norfolk State Hospital; died September 15, 1927, of organic heart disease, aged sixty-seven years.

An Error: On the authority of the Journal of the American Medical Association of October 15, this Journal last month stated that Dr. A. J. Edstrom, Stromsburg, had died. Dr. Edstrom is recovering.

RESOLUTIONS OF RESPECT

Doctor H. J. White*, one of the oldest resident physicians in this part of the state, having practiced his profession in Cherry, Rock, Keya Paha and Brown counties for more than forty years, passed quietly away at his home in Ainsworth, Nebraska, in the early morning of August 12, 1927.

Doctor White was a man of striking personality, loving, kindly disposition, and a doctor worthy of the name. Of him it can be truly said: "He loved his fellow man."

At the annual meeting of the Eighth Councilor District and Holt County Medical Societies the following resolutions were passed:

WHEREAS, disease and death has been the common lot of man throughout all the ages, and though, as did our professional brother, Doctor White, we spend our lives fighting its ravages, sooner or later it overtakes us and we are forced to yield to that which in the end must come to each and all.

Resolved, that through the sickness and death of Doctor H. J. White, this society loses a worthy member, the home community a conscientious, sympathetic physician, and society at large a man ready at all times to give his best energies to the cause of right and justice.

Resolved further, that a copy of these resolutions be spread upon the minutes of this society and a copy be sent to the bereaved widow at Ainsworth, Nebraska.

Dr. G. O. Remy,
Dr. W. J. Douglas,
Dr. J. P. Gilligan,
Committee.

Perhaps the elbow offers the most fertile field for errors in roentgenographic interpretation of any of the joints by reason of its numerous epiphyses; and in the young subject, the roentgenologist should never make a negative report concerning the whole elbow, but should confine his statement to the ossified portions of the bone and should state whether or not the epiphyses, if visible, are in their normal location, bearing in mind that there may have been an epiphyseal separation and the detached fragment perfectly replaced.—Dr. A. L. Gray (*South. Med. Jour.*).

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*Obituary in the September Journal.

In Exchange
#2.50

DRY CLINICS

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII. Norfolk, Nebraska, January, 1927 No. 1

BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose: A powder, containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.
THE MALTBIE CHEMICAL CO
NEWARK, N. J.

Calcreose

FOR BRONCHITIS AND TUBERCULOSIS

At this season when coughs and colds are prevalent it is well to guard against their more serious consequences.

In Calcreose you have a remedy that furnishes the full stimulant expectorant action of creosote without the disturbing effect of plain creosote.

Calcreose represents about 50% creosote in tablet form. It is easily administered and is particularly suitable as an adjunct to other remedial measures.

POWDER ::: TABLETS ::: SOLUTION

Samples of Tablets on Request

THE MALTBIE CHEMICAL COMPANY

NEWARK, N. J. : *Manufacturers of Pharmaceutical Products*

Complete Catalogue on Request

COLLEGE OF PHYSICIANS
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PHILADELPHIA

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

"COLICKY" Babies!

What's the best prescription?

Gelatine . . . plain, unflavored, uncolored and unsweetened Knox Sparkling Gelatine . . . has now taken its place in medical practice as a valuable factor in infant feeding.

It has been proved, through chemical tests, and through the experiences of eminent physicians and dietetic authorities, that 1% of Knox Sparkling Gelatine dissolved and added to cow's milk will largely prevent regurgitation, colic, diarrhea and malnutrition resulting from the excessive curdling of the casein by the enzyme rennin and the hydrochloric acid of the gastric juices.

Furthermore, besides aiding the delicate infant organism to properly digest the casein and the fat of cow's milk, it has also been proved that Knox Sparkling Gelatine increases the available nourishment of milk by about 23%—an important point, not only in infant feeding, but in the treating of underweight children and weakened adults.

The approved method of adding gelatine to milk is as follows:

Soak, for ten minutes, one level tablespoonful of Knox Sparkling Gelatine in one-half cup of cold milk taken from the baby's formula; cover while soaking; then place the cup in boiling water, stirring until gelatine is fully dissolved; add this dissolved gelatine to the quart of cold milk or regular formula.

NOTE: Knox Gelatine blends with all milk formulas. The protective colloidal and emulsifying action promotes digestion and absorption of the milk nutrients.

From raw material to finished product Knox Sparkling Gelatine is constantly under chemical and bacteriological control, and in all its process of manufacture, is never touched by hand.

KNOX
SPARKLING
GELATINE
"The Highest Quality for Health"

Send

This Coupon—register your name with this coupon for the laboratory reports on the dietetic value of Knox Sparkling Gelatine.

KNOX GELATINE LABORATORIES
~~116~~ 129 Knox Avenue, Johnstown, N. Y.

Please register my name to receive, without charge, results of past laboratory tests with Knox Sparkling Gelatine, and future reports as they are issued.

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Dear Doctor, Do Pay Your Dues!

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII. Norfolk, Nebraska, February, 1927 No. 2

Calcreose

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A Suggestion to Professional Men

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PETERS TRUST COMPANY
Farnam at Seventeenth

Have you followed the recent developments in treating mal-nutrition with Knox Sparkling Gelatine -and-milk? Our laboratory reports will put the facts before you....

At first, laboratory tests proved the discovery. Then, experiments with groups of children (such as the one recently conducted at the Christian Herald Children's home) confirmed it. And now, physicians in all sections of the country are reporting gratifying results in treating malnutrition with Knox Gelatine and milk. When the gelatine is dissolved and added to the milk, its protective colloidal ability greatly assists full digestion—it increases the available nourishment of milk about 23%. *Because it is unflavored, uncolored and unsweetened* only Knox Gelatine should be prescribed.

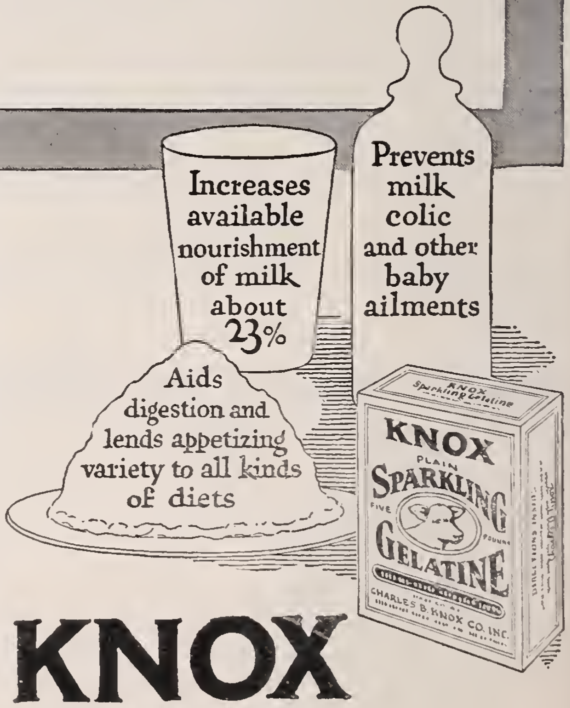
Method of Combining Gelatine with Milk:

Add one teaspoonful of Knox Sparkling Gelatine—which should first be soaked ten minutes in a little cold milk and then dissolved over hot water or in hot milk—to the glass of milk. (In infant feeding formulas use 1 tablespoonful of gelatine, dissolved as above, to the quart of milk.)

From raw material to finished product Knox Sparkling Gelatine is constantly under chemical and bacteriological control, and is never touched by hand while in process of manufacture.

Write for our medical reports and booklets, discussing malnutrition, infant feeding, liquid and soft diets, and other phases in gelatine's value to medicine.

KNOX GELATINE LABORATORIES
429 Knox Ave., Johnstown, N. Y.


Increases available nourishment of milk about 23%
Prevents milk colic and other baby ailments
Aids digestion and lends appetizing variety to all kinds of diets
KNOX Sparkling Gelatine
KNOX
PLAIN
SPARKLING
GELATINE
CHARLES B. KNOX CO. INC.

KNOX
SPARKLING
GELATINE

"The Highest Quality for Health"

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Dear Doctor, Do Pay Your Dues!

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII. Norfolk, Nebraska, March, 1927 No. 3

OLD FRIENDS ARE BEST

TIME provides the acid test for many things. Acquaintance grows into respect and respect into friendship as the years pass and positive qualities have an opportunity to assert themselves. It is thus with human friendships, and we see a marked parallel in the relation of the physician to the drugs upon which he relies.

New and untried remedies come and go. Many enjoy a brief moment of popularity. Few survive the acid test of time.

Creosote is still a favorite drug for us in the treatment of bronchitis, tuberculosis, and as an intestinal and urinary antiseptic. Its expectorant and antiseptic properties are generally recognized and the discovery of Calcreose more than a score of years ago has largely overcome its principal defect, which was the tendency to cause gastric disturbance.

The Maltbie Chemical Co. of Newark, N. J., contributed a distinct improvement to the Materia Medica of our time when it made Calcreose available as a therapeutic agent. By combining a high quality of creosote with hydrated calcium oxide we have been able to prepare a compound of creosote which breaks up rapidly in the intestinal tract, releasing the creosote for therapeutic purposes and avoiding the usual disturbance experienced when plain creosote is used.

Another advantage of Calcreose over plain creosote is that it is a powder and can be manufactured into tablets, thus facilitating the administration of this valuable drug.

We are always glad to supply samples of Calcreose Tablets to physicians for their personal use or for the purpose of testing its value upon their patients.

POWDER :: TABLETS :: SOLUTION

THE MALTBIE CHEMICAL CO.

Manufacturers of Pharmaceutical Products

NEWARK, N. J.

Complete Catalogue on Request

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

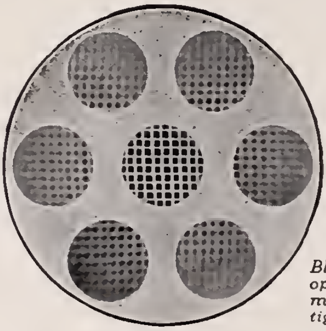
PETERS TRUST COMPANY

Farnam at Seventeenth

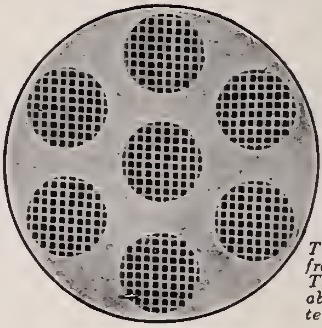
TILLYER LENSES

corrected for astigmatism and power

polished with a non-elastic polisher



Blur is often caused in ophthalmic lenses by marginal errors of astigmatism and power.



Tillyer lenses are free from these errors. They assure comfortable vision from center to edge.

LIKE true advances in medical or surgical knowledge, corrected ophthalmic lenses mean increased comfort and reliable, affirmative, relief-after-diagnosis; "Tillyer lenses," specified on your Rx, certifies an exact execution of your orders. Tillyer lenses not only are marginally corrected, but are polished with a non-elastic polisher, which, in itself, assures a brilliant, even surface and greater clarity, camparable to that of fine camera and astromical lenses.

American Optical Company

OMAHA, NEBRASKA

—Sales Branches and Rx Shops in all principal cities—

Annual Meeting, Lincoln Hotel, Lincoln, May 10-12

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII. Norfolk, Nebraska, April, 1927 No. 4

CALCREOSE

NOW!

JUST at this time, when coughs and bronchial affections seem to hang on in spite of persistent efforts to shake them off, use Calcreose.

The expectorant and antiseptic properties of creosote are well known.

Calcreose gives you the best there is in creosote therapy with practically all the undesirable drawbacks of plain creosote eliminated.

Give this improved form of Creosote in tablet form.

Each 4 grain Calcreose tablet contains 2 grains of creosote combined with hydrated Calcium oxide.

We are always glad to furnish free samples for trial.

THE MALTBIE CHEMICAL COMPANY
NEWARK, NEW JERSEY
Manufacturers of a full line of Pharmaceuticals
COMPLETE CATALOG ON REQUEST

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PETERS TRUST COMPANY
Farnam at Seventeenth

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OF PHILA

Caution!

THE *right* gelatine, (Knox Sparkling Gelatine), dissolved and added to milk for the bottle baby, will make it easier for the baby to digest the milk and absorb full nourishment. It largely prevents colic, regurgitation, diarrhea and other baby ailments. It helps malnourished children. It has great value in diets for diabetes, tuberculosis, convalescing patients, surgical cases, etc.

BUT—the *wrong* gelatine will curdle the milk!

Any plain gelatine with an acid content—is the *wrong* gelatine. Any gelatine that is flavored, colored or sweetened, is the *wrong* gelatine. Any gelatine not produced under constant bacteriological control is the *wrong* gelatine!

> *Knox is the approved gelatine because it is all pure, plain gelatine—every particle of it. It is neutral—no acidity! No flavoring. No coloring. No sweetening. All fine bone gelatine—the type of gelatine used and commended as a milk modifier by such eminent medical authorities as Jacobi, Herter, Alexander, Ruhräh and Friedenwald.*

Some physicians, not realizing the difference in gelatines, occasionally forget to specify *Knox* Gelatine in making their prescriptions. The result is that mothers, in some cases, are buying brands unsuitable for dietary purposes. As a protection, therefore, *we have requested the Government to raise the standards on gelatine.* Pending Government action, may we suggest that you specify *Knox* when you prescribe gelatine?

We have the findings of recognized authorities to prove the importance of Knox Gelatine to you in your practice. We have the experience of active physicians. We have valuable laboratory reports, not only discussing gelatine as a milk modifier, but outlining its importance in various kinds of diets. May we send you these reports?

METHOD OF COMBINING GELATINE WITH MILK:

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GELATINE
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Pioneers in conducting research into the dietetic value of gelatine.

Annual Meeting, Lincoln Hotel, Lincoln, May 10-12

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Vol. XII. Norfolk, Nebraska, May, 1927 No. 5

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII. Norfolk, Nebraska, June, 1927 No. 6

CALCREOSE

Eliminates Objections to Creosote

Creosote has long been used as an intestinal antiseptic as well as for its effect on pulmonary inflammations such as influenza, bronchitis, and tuberculosis.

Calcreose eliminates the usual objections to creosote. It is a chemical combination of creosote and hydrated calcium oxide from which the creosote is slowly liberated, thus aiding absorption and toleration.

Calcreose can be given in large doses for long periods without apparent difficulty.

Powder: Tablets: Solution **Samples of Tablets on Request**

THE MALTBIE CHEMICAL COMPANY
Newark, New Jersey

100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL Co
NEWARK, N J

A Suggestion to Professional Men

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PETERS TRUST COMPANY
Farnam at Seventeenth

To Oculists

OUR ANSWER IS

Yes

OCULISTS to whom we have described the remarkable advantages of the new Tillyer full-field lens have said when we finished:

"Well, if what you tell us is true, the Tillyer is not merely a better lens for certain purposes, but for all purposes. You must, therefore, expect ultimately to discontinue the manufacture of the less advanced types."

Our answer is "YES". We expect that the Tillyer full-sight lens (full corrected and hard-polished) will displace all other types. When the definite and demonstrable advantages of the Tillyer are fully known both to the optical professions and to the public, nothing less can occur.

With your permission we should like to send you detailed information about Tillyer lenses.

TILLYER

full field **LENS**

No More Blur

American Optical Company

Sales Branches and Rx Shops at 142 Principal Cities

Omaha, Nebraska

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, July, 1927 No. 7

CALCREOSE

IN

ENTERITIS

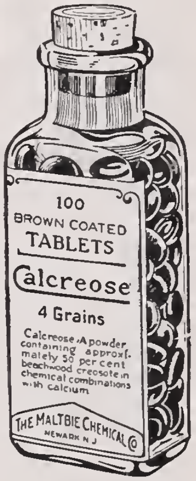
"CREOSOTE and guaiacol are used internally as intestinal and urinary antiseptics, as stimulant expectorants in bronchitis and in the treatment of tuberculosis. Their local irritant actions often interfere with their internal administration."
—N.N.R.1925,p.99

DURING the summer months intestinal antisepsis is particularly desired in connection with the treatment of various diseases of the intestinal tract.

CALCREOSE, being a loose chemical combination of equal parts of creosote and calcium oxide, is especially useful in this connection because it supplies all the benefits of creosote without the possible disturbances caused by creosote alone.

Calcreose can be given in large doses for long periods without apparent difficulty.

Powder: Tablets: Solution **Samples of Tablets on Request**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PARKE, DAVIS AND COMPANY

For Prevention and Treatment of Hay Fever—

PARKE, DAVIS & COMPANY'S

POLLEN EXTRACTS

Convenient—Accurately Standardized—Potent

THE timely administration of Pollen Extracts, P. D. & Co., will save many hours of needless suffering and loss of time, or the necessity of seeking a pollen-free climate for the hay fever period.

The first prerequisite for the successful use of Pollen Extracts, P. D. & Co., is to determine the nature of the pollen or pollen group to which the hay fever patient is susceptible. Pollen Extracts, Diagnostic, P. D. & Co., are especially adapted to this purpose, being put up in paste form in individual collapsible tubes, each containing a single pollen or a group of related pollens. The diagnosis is rapidly made—the technic is very simple.

If the patient reacts promptly to the pollen of the common ragweed, for example, the most frequent offender at this season of the year, or to the pollens of related genera, such as other ragweeds, marsh elders, or cocklebur, it is good practice to cover the entire ground by using the indicated group of pollens for immunization. This insures best results and affords satisfaction to both physician and patient.

For prophylactic or curative treatment, four groups are supplied in specially convenient packages, each containing 1½ cc. of a glycerin extract of the various pollens belonging to that particular group, in all, 10,000 units per cc.; and three vials of physiologic salt solution for making dilutions, each vial containing 4½ cc.

BIO. 360: GRAMINEÆ (Timothy and related grasses)—timothy, Johnson grass, orchard grass, Bermuda grass, and red top.

BIO. 362: CHENOPODIACEÆ (Russian thistle group) Russian thistle, white goosefoot, yellow dock, western water-hemp, and halberd-leaved orache.

BIO. 364: AMBROSIACEÆ (Ragweed and related genera)—common and giant ragweeds, rough marsh elder, burweed marsh elder, western ragweed, and cocklebur.

BIO. 366: ARTEMISIÆ (Wormwood and related species)—mugwort, prairie sage, sagebrush, wormwood sage, and Indian hair tonic.

For diagnosis, each of these groups is supplied in paste form as follows:
Pollen Group No. 28: Gramineæ (Timothy and related grasses).
Pollen Group No. 29: Chenopodiaceæ (Russian thistle group).
Pollen Group No. 30: Ambrosiaceæ (Ragweed and related genera).
Pollen Group No. 31: Artemisiæ (Wormwood and related species).
If preferred, tubes containing single pollens or other proteins are supplied.

Literature will be gladly sent to any physician on request

PARKE, DAVIS & COMPANY

[*United States License No. 1 for the Manufacture of Biological Products*]

DETROIT, MICHIGAN

THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, August, 1927 No. 8

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CALCREOSE

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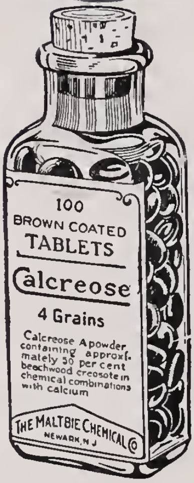
100
BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose A powder containing approximately 50 per cent beechwood creosote in chemical combinations with calcium
THE MALTBIE CHEMICAL CO
NEWARK, N.J.

Calcreose can be given in large doses for long periods without apparent difficulty.

Powder: Tablets: Solution **Samples of Tablets on Request**

THE MALTBIE CHEMICAL COMPANY
Newark, New Jersey
COMPLETE CATALOG ON REQUEST

A Suggestion to Professional Men

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PETERS TRUST COMPANY
Farnam at Seventeenth

NOW oculists
can write an ℞
direct
from the Phoroptor

—*for,* a Phoroptor ordered today is fitted with *additive* lenses—when you have secured just the suitable power, add the values of the Phoroptor lenses utilized and you have the effective power of the Rx lens needed. This new Phoroptor actually offers a new method of sight testing, and muscle testing, fully as accurate as the trial frame, and accomplishing refraction at thrice the speed.

Improved
EFFECTIVE POWER
PHOROPTOR
Patented

American Optical Company

Sales Branches in 142 American Cities
Nebraska Served Through Omaha

Clip today and mail today

American Optical Company,
Southbridge, Mass.

Please send information regarding your Improved Effective Power Phoroptor.

__________________________________, M. D.

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, September, 1927 No. 9

Calcreose

For Summer and Fall Colds

Bronchial affections following the colds contracted in late summer and early fall will often yield to the Calcreose treatment and more serious developments will be avoided.

Calcreose represents all that is good in creosote with most of the unfavorable effects eliminated.

Powder Tablets Solution

Samples of Tablets to Physicians on Request

THE MALTBIE CHEMICAL COMPANY
NEWARK, N. J. : *Manufacturers of Pharmaceutical Products*

Complete Catalog on Request

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PETERS TRUST COMPANY
Farnam at Seventeenth

ARE YOUR ASSETS INSURED?

YOU may never have a damage suit — BUT there are proportionately more claims against professional men today than residential fire losses

Compare this policy with any other

United States Fidelity and Guaranty Company

A STOCK COMPANY
BALTIMORE, MARYLAND
(Herein called the Company)

In Consideration of the Premium and the Statements in the Application

DOES HEREBY AGREE

PAYMENT OF DAMAGES	TO PAY any damages against any or each person insured under this policy, hereinafter called the Assured, for professional services rendered, or which should have been rendered by him and/or any assistant to him, including any partner, physician, dentist, anaesthetist, technician, nurse or any other person during the term of his insurance, and resulting from any claim or suit based upon
INJURED PATIENTS	A. Malpractice, error, negligence or mistake, or
AUTOPSIES OR RESTRAINT	B. Autopsies, inquests, or personal restraint, or
DRUGS	C. The dispensing of drugs or medicine, or
SUITS FOR COLLECTING FEES	D. Arising from any counterclaims in suits brought by an Assured for the collection of fees, provided such damages are claimed under paragraphs A, B, or C;
COST OF DEFENSE	TO DEFEND each Assured without limit of cost in any suit at any time filed and within the foregoing specifications

SUBJECT TO THE FOLLOWING CONDITIONS:

LIMITS OF LIABILITY	1. The Company's liability as to each Assured for damages on account of any one injured person shall be limited to Ten Thousand Dollars ($10,000) and subject to the same limit for each person, the Company's total liability as to each Assured during one policy year shall be limited to Thirty Thousand Dollars ($30,000).
COMMITTEES' CONSENT REQUIRED	2. No claim covered by this policy shall be settled or compromised by the Company except with the written consent of the Assured against whom claim is made, and the written consent of a majority of a committee of five members of this Group, composed as follows: Three members to be selected by the Group, one member named by the Assured against whom claim is made, and one member named by the Company. The facts of the case shall be presented to the Committee and the decision of the majority of said Committee refusing such consent shall be binding upon both the Assured and the Company. Subject to the decision of the majority of said Committee the Company must defend any claim or suit until all legal remedies have been exhausted.
ESTATE OF ASSURED	3. The protection under this policy shall include the Estate of the Assured.

SERVICE:—A country-wide organization—local agents in every territory—17 years successful experience handling thousands of professional liability claims and suits.

COST:—Annual Premium $20.00
Three Year Premium $54.00, Payable $27.00 First Year
$16.20 Second Year
$10.80 Third Year
X-ray specialists or radium users—$40.00 per annum.
(50% additional to either of these amounts for graduate assistant, technician or anesthetist).

United States Fidelity and Guaranty Company

BRANCH OFFICE

J. DILLARD HALL, Manager; John B. Wells, Asst. Mgr.; Henry Bush, Asst. Mgr.

13th Floor, Equitable Bldg., Des Moines, Iowa.

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, October, 1927 No. 10

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NEWARK, N. J.

FOR COLDS
OF EARLY FALL

OFTEN the prompt relief of bronchial affections by means of an efficient stimulant expectorant like Calcreose will forestall the more serious respiratory diseases.

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AUTOPSIES OR RESTRAINT B. Autopsies, inquests, or personal restraint, or

DRUGS C. The dispensing of drugs or medicine, or

SUITS FOR COLLECTING FEES D. Arising from any counterclaims in suits brought by an Assured for the collection of fees, provided such damages are claimed under paragraphs A, B, or C;

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LIMITS OF LIABILITY 1. The Company's liability as to each Assured for damages on account of any one injured person shall be limited to Ten Thousand Dollars ($10,000) and subject to the same limit for each person, the Company's total liability as to each Assured during one policy year shall be limited to Thirty Thousand Dollars ($30,000).

COMMITTEES' CONSENT REQUIRED 2. No claim covered by this policy shall be settled or compromised by the Company except with the written consent of the Assured against whom claim is made, and the written consent of a majority of a committee of five members of this Group, composed as follows: Three members to be selected by the Group, one member named by the Assured against whom claim is made, and one member named by the Company. The facts of the case shall be presented to the Committee and the decision of the majority of said Committee refusing such consent shall be binding upon both the Assured and the Company. Subject to the decision of the majority of said Committee the Company must defend any claim or suit until all legal remedies have been exhausted.

ESTATE OF ASSURED 3. The protection under this policy shall include the Estate of the Assured.

SERVICE:—A country-wide organization—local agents in every territory—17 years successful experience handling thousands of professional liability claims and suits.

COST:—Annual Premium $20.00
Three Year Premium $54.00, Payable $27.00 First Year
$16.20 Second Year
$10.80 Third Year

United States Fidelity and Guaranty Company
BRANCH OFFICE
J. DILLARD HALL, Manager; John B. Wells, Asst. Mgr.; Henry Bush, Asst. Mgr.
13th Floor, Equitable Bldg., Des Moines, Iowa.

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, November, 1927 No. 11

Calcreose

Solves
an Important Problem

Many authorities recognize the value of Creosote as a stimulant expectorant in treating Bronchitis and Tuberculosis.

The objection to plain Creosote is the gastric distress that often accompanies its administration.

Calcreose (Calcium Creosotate) solves this problem. It represents all that is good in Creosote with most of the unfavorable effects eliminated.

Samples of Tablets to Physicians on Request

THE MALTBIE CHEMICAL COMPANY
NEWARK, N. J. : *Manufacturers of Pharmaceutical Products*

Complete Catalog on Request

BROWN COATED
TABLETS
Calcreose
4 Grains
Calcreose. A powder, containing approximately 50 per cent beechwood creosote in chemical combinations with calcium.
THE MALTBIE CHEMICAL CO
NEWARK N. J.

A Suggestion to Professional Men

PROFESSIONAL men know that only years of training qualify one for his profession, and also that years of experience are necessary to produce good business judgment.

Your accumulation of years should be entrusted only to experienced hands.

The Trust Department of this company is directed by qualified men who will be glad to advise you without charge.

PETERS TRUST COMPANY
Farnam at Seventeenth

on the EFFECTIVE POWER plan

The Tillyer TRIAL SET

MOST ADVANCED IN SCIENCE
MOST CONVENIENT IN PRACTICE

BOTH in theory and practice the new Tillyer Trial Set meets every possible requirement; every fundamental need has been satisfied. Specifically, the Tillyer Trial Set offers you three advantages:

1. The combined power of the marked values of the spherical lens and the cylindrical lens is the exact effective power of the required single Rx lens.
2. Every lens is designed strictly in accord with theoretical equations of additive power.
3. All commonly used spheres and all cylinders are the largest diameter theoretically possible.
4. Oblique aberrations are reduced to a minimum, yet all lenses are of a good form.
5. A greater range of cylinders than any other standard trial set makes possible the correction of unusual cases; the cases that build prestige.
6. By means of a set of auxiliary lenses the strictly correct spherical range is increased in both plus and minus by ten diopters, total 30D.

American Optical Company

Factories at Southbridge, Mass.; Sales Headquarters 70 W. 40th St., N. Y.

Sales Branches and Rx Shops in 142 Principal Cities

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THE NEBRASKA STATE MEDICAL JOURNAL

ESTABLISHED 1916 BY THE NEBRASKA STATE MEDICAL ASSOCIATION

Vol. XII Norfolk, Nebraska, December, 1927 No. 12

Calcreose

A Good Expectorant

CALCREOSE is effective as a stimulant in the treatment of chronic bronchitis and other bronchial affections, as well as in tuberculosis because it presents the well-known therapeutic effect of creosote in a form that is more agreeable to the patient.

Calcreose can be administered in large doses over long periods of time with little or no disturbing effects on sensitive stomachs. In cases where slight discomfort may be experienced, tolerance is rapidly developed by starting with a small dose and gradually increasing it.

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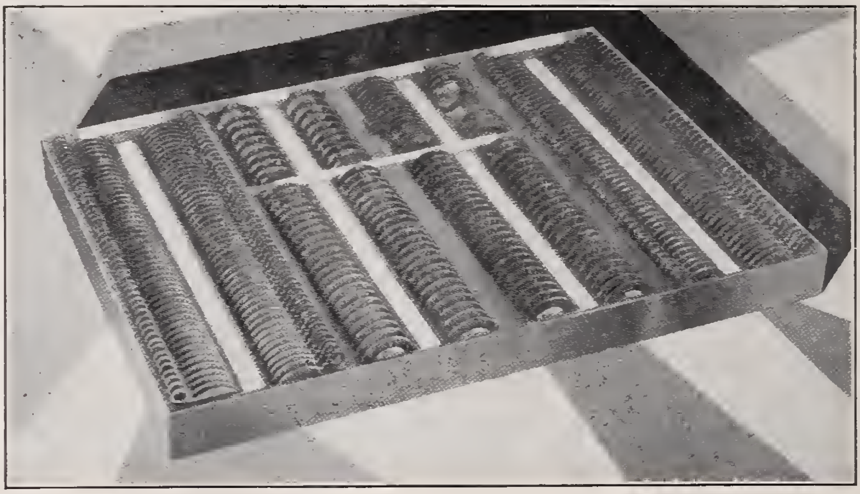
on the EFFECTIVE POWER *plan*



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